Anniversary Issue

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ADVERTISERS

EDITORIAL
NEWPORT, RHODE ISLAND, USA - THE EDITORIAL STAFF

This issue marks the beginning of our THIRD year of operation, and we'd like to thank you, our readers for making it all possible. This is a BIG year for our community, with two International QL Meetings already behind us (the 4th Italian QL Meeting , and the International QL Meeting held at Eindhoven Netherlands), and at least two more planned. Why all the fuss ??? 1993 marks the tenth anniversary of the QL's launch, and the tenth anniversary of QUANTA. *(Editor's Note: In this issue we have an extensive report on the Eindhoven meeting.)*

Quanta is expected to announce a "Special Anniversary Issue" of its magazine and the date of its 10th Anniversary party (more details to follow). We've also heard that a number of European groups are in the planning stages of a gala 10th birthday party for the QL. What are we doing ???

IQLR is sponsoring *MIRACLE in NEWPORT '93'* a QL/QDOS Get-To-Gether to be held on the 5th of JUNE 1993 in Newport, Rhode Island, USA. The festivities will be held at the Salvation Army Building on Memorial Boulevard between the hours of 1300 and 1800 (1PM to 6PM EDST).

A first in North America will be the attendence of :

Stuart Honeyball of Miracle Systems
Tony Firshman of T.F. Services
Bill Richardson of W.N. Richardson & Co. (EEC)
Bill Cable of Wind & Wood Computing
Frank Davis & Paul Holmgren of Mechanical Affinity

There is also the possibility that Freddy Vachha of Digital Precision and Dilwyn Jones of Dilwyn Jones Computing will be able to make the trip, and who knows there may be others as well (it would be nice to have a representative from QUANTA join us).

Among The new items on display will be Miracle's NEW QXL PC Card, T. F. Service's will have the latest in MINERVA ROM and HERMES upgrades, Wind & Wood Computing will be demonstating QLERK (does for the QL what Quicken does for the PC), and IQLR will have Jurgen Falkenberg's new Tower Cased QL the QL-2000 on display. There will be plenty of spare parts and all the goodies a QL'er could dream about. For additional information see our advert on the back cover of this issue.

Changing the subject; IQLR and Miracle Systems Ltd. of the UK have reached an agreement by which Miracle Systems becomes IQLR's agent for the British Isles and Europe. Our overseas readers will now be able to place their subscriptions to IQLR with Miracle Systems, and at the same time, take advantage of Miracles ability to accept all major credit cards.

QUANTA MEMBERS: We've received 4 new disks to add to the Quanta Library; DEMO_1, DEMO_2, DEMO_3, and DEMO_4. These disks contain demos of commercial software and are not to be confused with the MISC. DEMO catagory. We also have 2 upgrades to exsisting disks; SPECIALS_3 and SPECIALS_7. Roy Brereton the Quanta Librarian promises additional disks soon.

In closing let us add our voice to that of our European brethren, *"Long Live The QL"*.

PERFECTION SPECIAL EDITION
AN EXCITING NEW DEVELOPMENT

In the case of many word-processing objectives, the best way to implement them is pretty clear. There are some areas, however, where individual tastes and preferences can differ very widely. One such area is the reformatting of text - the adjustment of previously entered text to conform to margin, indentation, justification and pagination settings after you go back (or forward!) to it and make alterations, either by hand (by typing and/or deleting) or by using individual or global search and replace. When new text is being entered at the foot of the document or at the end of the current paragraph, all word-processors behave virtually identically, obeying the current settings - it is in the matter of amending existing text (inserting, changing or deleting) where conflicting philosophies apply. Text-handlers differ in their treatment of this: Editor, Wordperfect, text[87], Quill, AmiPro & Word all behave differently.

Editor, Spy, most versions of Wordstar, and all technical editors leave all reformatting to you. While at first this may seem harsh, this manual mode gives you a lot of control, makes the handling of tables and other technical applications better (do you really want to reformat that BASIC program into a single paragraph?!?), and is easy on the eye. But you must remember to reformat as the program won't, and this can be an annoyance. If you move away and forget to clean up, your printout will probably be incorrect.

Wordperfect **will** auto-reformat, but generally only when you move the cursor from the line containing the change. Changes you make while your cursor is within the line will only cause the line to contract or expand up to the margin. This too is easy on the eye, but there is the drawback that the overall picture of the page may be inaccurate while you are inserting or amending text, and that when you move the cursor away (and hence trigger the auto-reformat), you may not notice any undesirable effects caused (e.g. widows, orphans, inappropriately positioned page or line breaks).

QL Quill auto-reformats, but because of its slowness it uses a trick. As soon as you start inserting within the middle of a paragraph, Quill splits the para in two and also creates temporary blank lines to separate the parts. This means Quill does not need to reformat until you have finished amending. What you type appears at the end of the first part of the paragraph. This has the advantage and disadvantages of the Wordperfect method, but additionally the split can be a bit disconcerting and the screen display is **grossly** wrong during the editing. Also, a bug (present even in the final release of QL Quill) causes a line to be shown twice on the Quill screen while it is only really present once: you will regret it if you delete the apparent duplicate as an unduplicated line will get deleted.

Word (a fine Windows program) auto-reformats in situ, in real time, as-you-type. But if you have a long complex para and you are editing near the top of it, you may notice the time taken for the reformat *even on a 486/66MHz* (QL users should note that this is >20 times faster than a Gold Card i.e. about the speed we expect from a *fully tweaked* QXL). Also, cursor movement will appear to some as a bit erratic (which is hard on the eye) especially if right justification is on or if the on-screen fonts are proportional. It can also be quite distracting to keep seeing the ripple effect of changes as text on lower lines is reformatted. AmiPro is somewhat better in this respect as there is a small delay (almost a second) before AmiPro refreshes lower lines on the screen: easier on the eye.

The new release of **PERFECTION SPECIAL EDITION**, version 5, gives the user <u>the best of all worlds</u>, by combining the best of all the above methods and avoiding all the drawbacks. The user is given the opportunity both to pre-configure and to adjust at will from inside the program, the desired auto-reformatting behaviour. The options are to either select Never (giving Editor-like action for technical users: this is what all previous versions did, where you had to press a key to get the para to reformat after re-editing it), Instant (giving in-situ real-time automatic reformatting as-you-type, as does Word) or User-delay, the most flexible setting of all (giving slightly delayed updating of lower lines of text, like AmiPro, but also - and unlike AmiPro - giving you, the user, full control over how long the delay is). No other program is this able.

On User-delay the user is free to set any delay from 0.1 seconds to 99.9 seconds in 0.1 second steps. About 1-2 seconds is best for slow typists, and 1.5 seconds is thus the default. This means that you are not hassled by continuing screen changes on lines below the one you are editing and concentrating upon, or shufflings around on the current line caused by right justification etc. So the Word disadvantage (much more noticeable on slower hardware) is avoided, without recourse to the Quill temporary blank line nuisance. When you pause in your typing for longer than the set delay, **PERFECTION SPECIAL EDITION (SE)** automatically tidies up, without you having to do anything (getting around the Wordperfect and Quill drawback of making you mentally adjust for the screen remaining occasionally out-of-sync with reality).

If you are a reasonably fast typist, you can experiment with shorter delays (say 0.5 seconds). If you are a speed demon, set the delay to 0.2 seconds and see if you can ever manage to "get ahead" of the program! In real life, very brief settings are indistinguishable from 'Instant', when the reformatting always keeps pace.

On the User-delay setting **PERFECTION SE** will, as does Quill and Wordperfect, auto-reformat *instantly* (no matter how long a delay you have set) if you either navigate off the line **or** invoke **any** menu or direct command (including Save, Export etc.). This means that you are never left with the document "wrong".

There are many other improvements in the new release of **PERFECTION SE**. One in a similar area is with SHIFT/CAPS, the one (out of five) manual reformatting option that allowed reformatting of a para from the current line onwards without affecting previous lines. SHIFT/CAPS will now additionally obey the indent margin (which matters if the cursor is on the first line of the para) and, more significantly, it will leave the cursor position unaltered within the text (previously, it used to move the cursor to the start of the next para). Other reformatting commands are unaltered, so you can still step through paras reformatting easily.

PERFECTION SE v5 costs £99.95, or £139.95 in **PLUS SE** incarnation (i.e. with spellchecker, dictionaries & maintenance programs), less discounts that can total 40%. There is no special upgrade price to v5 for existing **SE** owners - only DP's usual reasonable £10 update charge (but as an offer to IQLR readers, open for four weeks from the date of publication of this issue, existing **SE** or **PLUS SE** owners can get the upgrade totally free provided they order other DP programs of total value (after all discounts) exceeding £25. To upgrade from the STANDARD version of **PERFECTION** costs, as with all upgrades, the difference in price plus just £10, i.e. £50. The user should not return any documentation, just the one master disk. Remember special deal prices, which give discounts of up to 25% more than one program is purchased (or upgraded) at the same time (do you have LIGHTNING SE?), and the further **20%** discount to IQLR readers: see the pricelist page for details. To get the very best out of **PERFECTION SE**, use it in conjunction with PROFESSIONAL PUBLISHER, with attendant TOOLBOXes and FONT ENLARGER.

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A REPORT - INTERNATIONAL QL MEETING
EINDHOVEN, THE NETHERLANDS - DILWYN JONES

Friday February 26th fourteen of us depart from Great Britain for Eindhoven in the dreaded Quanta minibus, driven by Phil Borman (not that Phil's driving is any reason to dread travelling in it!). Our destination was St Joris college, Eindhoven, for the latest International QL Meeting, organised by the Dutch and German QL user clubs.

The hall was full of traders, user groups and visitors from various European countries. People came to the show from Norway, Germany, Italy, Belgium and France. The show was very well attended indeed.

The show consisted of traders' stands, talks and lectures, and of course the chance to meet and talk to QL users from all over Europe. Although it was not billed as such, this could well have been the QL's tenth anniversary meeting. At least there was a public address system to announce lectures and so on, a lesson for other QL show organisers to learn.

Most of the well known QL traders were present. From England, Miracle Systems, Digital Precision, W.N. Richardson & Co. (formerly EEC Ltd), TF Services, Qubbesoft, QL World and Quanta had come along and set up their stands.

Miracle Systems Ltd were showing an early version of their QXL add-on card for PC's. This is a small card which is inserted into a slot in a PC and enables the PC user to gain access to 68000 processor technology, most notably to QL software, by using a compatible variant of QDOS called SMS. The card uses a 20MHz 68EC040 processor, has a QL compatible network port (no need to throw away your old QL, keep it and network it to the PC-QL!) and can have up to 8 megabytes of RAM! You can of course save QL files to the PC drives, it uses the PC as the I/O system. The software (including a version of SuperBASIC) is loaded from disk or hard disk. Stuart Honeyball gave an interesting talk about the QXL but was unable to supply details of when it would be available or how much it would cost. He said he was hoping for a good degree of compatibility with existing QL software and hoped for good co-operation with QL software houses.

Sadly, he was unable to provide much in the way of details concerning the QL Graphics Card and SCSI Interfaces - it seems these may not be available as quickly as the QXL.

Digital Precision demonstrated their range of QL software and confirmed that they were co-operating with Miracle on software development and trying to ensure a good degree of compatibility with their range. Digital Precision have a new version of Lightning Special Edition for Gold Card users, and a new version of PC Conqueror. There are also rumours of a development of Professional Publisher, although I do not yet have details of this. As an aside, Freddy Vachha played a lot of chess on this trip and remained unbeaten (or if he was beaten, he was not admitting to it).

TF Services exhibited their Minerva and Hermes chips for the QL, along with a range of spare parts. TF Services, along with W. N. Richardson and Co., appear to be one of the few sources of spare parts such as keyboard membranes for the QL. Tony and Laurence are looking at the possibility of producing add on hardware devices which could be connected to a QL with a mark 2 Minerva via the I2C interface, and it seems

EINDHOVEN MEETING - (CONT'D)

that the first device will consist of a parallel and analogue interface, but no details are available yet.

Tony Firshman confirmed that he would be launching what is hoped to be a series of shows called Traders Fairs around England, starting with London on 1st May. The first venue will be St Helens Church Hall, St Quintins Avenue in London, familiar to Quanta members as a recent venue for a Quanta Workshop. We look forward to these shows spreading around the country rather than just having shows based in London and the South of England as they have tended to be in the past, although a QL show is planned for the Manchester area in early September.

Qubbesoft brought along their range of public domain software, which appeared to be selling well, and also showed their range of hardware for the QL. Qubbesoft is rapidly becoming a major hardware producer for the QL - they currently sell the Expandaram 512k memory expansion and Trump Card formerly available from Miracle and now also produce the QEP III EPROM programmer,which is a device which plugs into the QL'sexpansion sockets and can quickly and easily program most commonly available types of EPROM. Sadly it has no through port, so it is not possible to attach another board such as a disk interface unless it has a through port, so the only ways to use it appears to be either by copying the ROM image to be programmed onto a microdrive cartridge or connect to your main QL via a second QL using a network cable for transferring the software. Although back issues of old copies of QL World are not officially available, second hand suppliers such as Qubbesoft have some stocks of older issues. If looking for back issues, it is worth contacting Ron Dunnett. He also has occasional stocks of older QL software and may be able to supply that rare program you need!
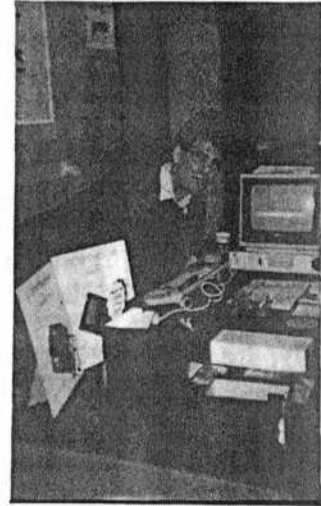
W. N. Richardson and Co. are the major supplier of QLs at the moment. They also supply spares, accessories such as monitors, replacement keyboards, printers, serial mouse systems and disk drives. They can also supply the Psion software for the QL. If you bought a QL without the software, or if you'd like to upgrade your older version of Quill, Archive etc. to version 2.35. Then this is a good source.

From Belgium, the **van der Auwera brothers**, Joachim and Nathan, demonstrated and sold their latest software creations for the QL. I believe LineDesign is the first object - orientated graphics program for the QL.

EINDHOVEN MEETING - (CONT'D)

It allows pictures and text to be defined as 'objects' rather than bit maps, so they can be changed at will (size, position, attributes, etc) without loss of detail. The fonts used are outline fonts which means they can be scaled and printed to great detail, especially when printed on a high resolution printer such as a Deskjet where excellent results are possible. Version 3 of Data Design was shown - this is a development of the well known pointer driven programmable database w ith the possibility of disk based files if too large for memory, a major limitation of earlier versions of the program. Sadly, the early versions of both programs turned out to have a large number of bugs and it' s hoped that PROGS will move quickly to issue corrected versions of these programs.

Jochen Merz looked very busy during the entire show. He demonstrated his well known range of software and new versions of some established favorites such as the QD editor (now in version 5) and QMenu (the Menu Extension is now at version 4 with enhancements such as Do and Report). The only alternative spreadsheet for the QL, QSPREAD, is now at version 1.12. A new program, HyperHelp, makes it easy to set up help text files to give on-screen help to remind you of the syntax of BASIC commands and extensions. It is a very simple and highly useful little utility. Bob Weekes of Pointer Products, who sells and gives advice on Jochen Merz's software in England, was also present to discuss and help answer problems.

Although I am not a BBS fan myself, one item of interest to QL users who go in for this type of thing is the QPoint software from Erik Slagter, QDOS Software of the Netherlands. It is a mouse driven QBox Fidonet mail reader for all QDOS users. Unfortunately, I lost the information on this item, including the author's address, on the way home, so I don't have more details. If you wish to find out more, I'm sure the Dutch QL user club can point you in the right direction.

Jurgen Falkenburg has a wide range of hardware and software for the QL. In addition to the established QL-BUS, hard disk interface, and keyboard-90 interface, he now produces the QL-2000 tower system, which provides a neat and simple to install one-box expansion system to house disk drives, Gold Card or any such expansion card along with the QL board itself and a 200W power supply with a front panel switch. The unit measures 5 x 13 x 17 inches and can also accommodate a hard drive if required. His QL-BUS driver unit means that up to 5 cards can be plugged in vertically. You can choose to assemble it yourself as a kit or have Jurgen do the assembly for you at extra cost. It is a pity that Jurgen does not advertise more widely. His products for the QL could well prove to be quite popular if they were more widely known - some of them are available from W.N.Richardson and Co. in England, and Mechanical Affinity in North America.

EINDHOVEN MEETING - (CONT'D)

Albin Hessler demonstrated his range of QL software, including the EasyPtr and Disa programs. Albin also produces the serial mouse driver software, which allows a PC-style serial mouse to be connected to a serial port on the QL and used with the pointer interface as though it was a QIMI mouse. The more recent versions of the software allows such a mouse to be used also as a cursor-emulating mouse by pressing the left mouse button twice quickly to switch modes - this allows use of the mouse with some programs which are not pointer driven.

Ergon Development from Italy made a rare appearance. Davide Santachiare publishes several QL programs, including Open World, a graphics file format converter (useful for transferring clipart pictures from other computers for example). DEA is an intelligent disassembler program. Their QLibrary Manager and MasterBASIC utilities are programming aids for SuperBASIC, while Music Manager is one of the few music programs on the QL. It is simple to use and surprisingly versatile, given the limitations of the QL's sound hardware. The ZM programs are emulators for the ZX Spectrum, while the ZM/hT is a Z80 machine code compiler, which produces 68000 processor machine code, allowing many Spectrum games, for example, to be run on the QL at speeds matching that of a real Spectrum if you have a QL with Gold Card! Ergon also sell the System 2 exapnsion unit and SPEM QL keyboard replacement.

Cowo Electronic came from Switzerland to demonstrate the latest version of their QTOP software, now at version 1.20 with a number of enhancements. Urs Koenig also announced details of a MkII version of his ExeQtor QL derivative. This second version will use an i386sx/25 MHz PC mainboard with a Miracle QXL installed, it is hoped.

User groups were out in force. Quanta came from England to enroll new members and sell their range of products, from T-shirts to binders and assemblers - their QMAC assembler is one of the few assemblers available for the QL at the moment.

QItaly, the Italian club, were represented by Eros Forenzi and Roberto Orlandi. They showed a publication called Mondo QL - it contains lists of QL products available for Italian QL owners and various articles. The QItaly club also publishes a disk-based magazine for the QL, which contains reviews, articles, public domain programs and screenshots taken from commercial programs. Each disk is said to contain over 700 kilobytes of material. Since it is mostly in Italian, it may not be understandable to QL users in other countries, but copies of the disks are also available from IQLR.

Sin-QL-Air and the German QL Club were also present - these two clubs were the main organisers of this meeting. Members from other clubs from countries as far away as Norway were also present.

EINDHOVEN MEETING - (CONT'D)

The International Freeware Exchange is a group dedicated to the exchange of free software (public domain) between organisations such as user groups in various countries, rather than dealing directly with individual customers. The organisation is based in Germany and run by Franz Hermann. Disk based catalogues were available on their stand.

In addition to those listed, there were also several traders who are not so well known, mostly selling old books and software and old hardware, which goes to show that rummaging amid the contents of these types of stands at shows is often a good reason for visiting in itself, you can often locate an old book or old piece of software you thought was no longer available at bargain prices, quite apart from the general fun of seeing what you can find. Going to such shows is also a good way of finding the answers to your questions and problems - you can meet the traders to sort out problems with their products, meet some experts who can give you free advice and generally make new friends. Language need be no barrier, the QL is international!

After an enjoyable day at the show, we retired to our hotel, accompanied by Marco Holmer, secretary of Sin-QL-Air then set back for England the following morning through the snow, but not before spreading the QL gospel in The Netherlands by writing 'Het QL' in the snow everywhere.

We thought we'd managed to lose Freddy Vachha, but eventually found him to take home with us. I took a picture of Freddy stretched out, fast asleep in the lounge of the ferry complete with shirt out of his trousers and so on, which I had intended to submit to this magazine as a caption competition. Sadly, the picture came out too dark and is no good, so be on your guard the next time Freddy, as I will try again....

During the meeting, rumors of a tenth anniversary celebration of the QL's existence were rife. At this time, I don't know if it will be held in The Netherlands, Germany, or England, but it should be quite some party for QL owners. There will also be an American show organised by IQLR with traders from Europe present. It looks like the tenth year of the QL may be quite a busy one!

QL - PC Fileserver
TROY, MICHIGAN, USA - DON WALTERMAN

In the past, a number of articles have been written describing how to transfer files from a QL to a PC. These usually involved using terminal programs on both ends or writing some basic program to manage a file transfer. These methods are cumbersome at best. I will admit that I've always wished there was some way the QL could have access to PC devices and even more than that control those devices as if they were part of the QL's own hardware.

Enter QL-PC Fileserver. Di-Ren has written a program that puts the hardware of the PC under the QL's control. The fileserver gives the QL owner access to the PC's floppy drives, hard drives, network drives, printers and display. This program not only works but works very cleanly. This program turns the PC into a fileserver that responds to all requests from the QL. Another way to look at it, is the PC becomes the QL's humble servant patiently waiting to perform any task the QL requests.

FILESERVER - (CONT'D)

QL-PC Fileserver runs on virtually all QLs and PCs. The only requirements are the PC must be running on DOS 2.2 or higher and it must have one available serial port. Connecting the QL and PC was a bit of a challenge. The instructions to do this were somewhat cryptic. This is common anytime RS232 is used to connect different devices. I've tested the following cable connections (except the information on the European BT plug):

Signal Name	QL UK BT 6 pin		QL US/German 9 pin D		PC 9 pin D DB9M	PC 25 pin D DB25S
	ser1	ser2	ser1	ser2		
Ground	1	1	1	1	5	7
Transmit (TXD)	2	3	2	3	3	2
Receive (RXD)	3	2	3	2	2	3
DTR	4	5	4	5	7	4
CTS	5	4	5	4	8	5
no connection	6	6	6-9	6-9		

I found it was cheaper to buy ready made PC cables (then modify them) than it was to build the necessary cable from scratch. The rule when buying PC cables is: make sure the connectors are not molded. If they are, you won't be able to rewire them to work on the QL. I've found the monitor extension cables for the PC very useful. These cables have all 9 pins wired straight through. They are available locally for around $3 and make good serial port extension cables. I've rewired one with pins 2 and 3 swapped, pins 4 and 5 swapped and pins 6-9 disconnected. This cable lets me take any cable designed for a specific serial port and use it on the other right away without building another cable.

Once you have the proper cable connected between the QL and PC, most of the installation is done. Starting the PC side of the fileserver is a simple one line command:

    QLNET /comx/y/z/V2
        replace x with the com port you will be using
        replace y with the baud rate
        replace z with the default PC drive
        use V2 if the fileserver is a stand alone task. not using V2
        enables the fileserver as a TSR (default)

Starting the QL side is simple as well. First, load the code file.

    LRESPR flp1_net_bin (TKII version)

If you have Minerva, don't forget to specify the drive name. If the flp1_ is left out you get a bad name error. To start the fileserver program on the QL side enter

    baud x
    pcserve sery
            replace x with the fastest baud rate the QL and PC share.
            replace y with the serial port connected to the PC

Don't forget to set the baud rate before entering the pcserve command. Use the fastest baud rate the QL and PC have in common. On non-Hermes QLs that should be 9600. If you have Hermes use 19200. The QL and PC will then exchange information and you should see your cursor come back right away. If you get a timeout message either your cable is bad, the ports don't match the commands or your baud rates don't match.

FILESERVER - (CONT'D)

You now control the PC. All commands are entered from the QL keyboard. Entering PCLIST returns a list of all drives available on the PC. Drive B will be in the list even if your PC doesn't have a drive B. That is a 'feature' (bug) in DOS. DOS always assumes a drive B is present. If you have a hard drive, enter dir pcd3_. You will see a listing of the PC C: drive on your monitor in the familiar QDOS format. You now have the power to load PC files into your favorite QL word processor/editor directly. You also can save QDOS files directly onto the PC drives. I tested this with Quill and Text87. It worked smoothly. The only drawback is speed. Even at 19200 baud, it takes time to transfer a large file across the RS232 link. For a worst case test, I stored a Text87 file containing all the zipcodes in the United States with city and state information onto the PC drive C:. This file was just under 1.2 MBytes. The time it took to load from a QL floppy disk was under 40 seconds. The time it took to load from the PC drive C: was 23 minutes 45 seconds. The delay will not be as obvious with normal QDOS files but it will be slower than saving to a normal QL floppy disk. If the speed penalty is not an issue, you can use the PC hard drives and floppy drives just like your normal QL devices. The main exception is formatting PC devices. This is not allowed from the QL. Other commands that are not allowed are RENAME and TRUNCATE.

Commands like DIR, DELETE, COPY, WSTAT, WCOPY, WDIR, OPEN_OVER and FLUSH are all implemented. For example, WSTAT pcd3_T91 will provide a list of Text87 files on the PC's drive C: with file length. Commands are included to manage subdirectories on the PC drives. They follow the format of TKII commands. You can even set or clear the read only attribute on files.

QL-PC Fileserver includes a rich collection of additional features. Your QL now has access to the PC's printer. I tested this feature by sending a screen dump using QRAM to LPT1. Screen dumps send alot of data to the printer and its very easy to see if any bits are lost/garbled. The screen dumps were perfect. This means your QL and PC can now share a printer without having to recable or use a switchbox. The fileserver package includes other printer options. The command PC_DEV ser2,lpt1 redirects all output from the QL ser2 port to the PC lpt1 port. The fileserver automatically adds a CR(chr$(13)) to the normal QL LF(chr$(10)) so no changes are needed to your word processor setup. You now have access to the PC screen. You can copy files or send messages to PSCR just like you can to the QL's scr device.

I was impressed that the PC program loaded as a TSR. This leaves the PC able to run other software at the same time the QL is using it. I was able to run Lotus 123 on the PC while accessing drives A: and C: from the QL.

The manual is well written and concise. The author understands what information needs to be provided for the buyer to be successful. Each command description includes a complete example showing proper useage. I wish other products could combine complete examples with clear instructions presented in the order you need to get up and running fast. The only fault I have with the manual is that attention should have been paid to describing the exact cables needed. If the interface cable is not right you'll never get started. Thats why the cable details are included in this review. *(Editor's Note: QL-PC FILESERVER is available from Dilwyn Jones Computing, please see their advert for pricing information).*

FILESERVER - (CONT'D)

If you are the lucky owner of a Minerva, make sure you get version 1.02 or newer of the fileserver. Earlier versions reported errors on Minerva QLs when trying to access the pcd device.

If your PC is attached to a network, the QL now has access to the network as well. I was not able to test this feature but it appears that any device the PC sees as a disk drive can be accessed from the QL as well. This is a very powerful feature. For example, if the PC has a drive K: that is really on a networked PC somewhere else, the QL can now access that drive.

The QL owner now has another option to choose when backing up software. The fileserver program lets you create a subdirectory on the PC drive C:. You can copy all files you want backed up to the subdirectory. Then you can use whatever backup routine the PC uses.

To test the fileserver I used three different QLs: Gold Card with Minerva and Hermes, Gold Card with MGSJ and Hermes and Trump Card with MGUK and original 8049. On the PC side I used a Hewlett-Packard Portable Vectra (XT class laptop) with 640k, 2 MBytes expanded memory, 20 MByte hard drive expanded to 40 MBytes with Stacker using DOS 3.3 and DOS 5.0. I also used a Compaq Portable II (XT class) with 20 MByte hard drive. All machines worked well with the fileserver program.

The program adds some files to the PC that should be removed if you only use the PC temporarily. They are in the form C-QL.DIR and A-QL.DIR. They appear to be images of the drives directory listing.

If the thought of the new QXL card has you considering buying a PC to dedicate to QDOS, QL-PC Fileserver is a great way to get an early start using a PC under QDOS. If you don't have a QXL in your future, QL-PC Fileserver is the best way to take advantage of inexpensive PC hardware with a standard QL. If you want to share a printer between your PC and QL without cable hassles this program is the answer again. QL-PC Fileserver lives up to Di-Ren's reputation for quality.

HELPFUL HINT - SERIAL MOUSE

Many users have reported problems when attempting to use Albin Hessler's Serial Mouse software. Frank Davis of Mechanical Affinity reports that most of the problems he has seen can be solved by following three basic steps: first, its necessary to make a small QL cable to hook to a serial mouse; the second, requires people with 9 pin serial connectors to use the GERMAN wiring setup (not the English); and the third, requirment is to use the GERMAN version of the software drivers (not the English). The English machines use the BT connector for their serial ports, while German and North American machines use the 9 pin D connectors.

JOCHEN MERZ SOFTWARE
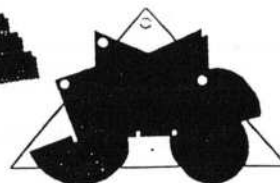
Software- Development - QL-Soft-&Hardware Distributor
Im stillen Winkel 12 · 4100 Duisburg 11 · Germany
☎ and Fax: 0203-501274 · Mailbox: 0203-591706

Experience has shown that it is a complete waste of time to state any other prices than DM. Credit card purchases will be made in DM anyway, and you have to make sure for any other way of payment (e.g. £-order-cheques) that it reflects the exchange rate at the time of purchase. As in 1993 the VAT-rules within the EEC have been changed, the prices shown include 15% VAT now. Customers outside the EEC pay 15% less, but they will probably be charged the VAT rate of their country from their customs. Within the EEC, all customers benefit because our VAT rate is the lowest, so it is already a kind of "discount". It will also simplify customs handling, e.g. in case of repair or upgrade etc.
On to the many news: The Oracle, HyperHELP for BASIC, QD Version 5 and Menu Version 4!

QD Version 5 – The first (and only) Editor using the PE. Dynamic memory allocation, no limit on numbers of lines, comfortable block-handling and many, many new features, e.g. improved print menu, better search/replace, GOTO Procedure and Function, even Machine code label.
New features: V5 Thing Interface which makes QD5 extendable and inbuilt **HyperText HELP System!** This HELP System is very easy to use, simply move the cursor over a word and press HELP (F1) and you get extensive help on the subject. With complete HELP (German and English) for SuperBASIC, inclusive examples! It is very easy to make Assembler-Help, e.g. get external definition of routines, libraries etc. with one keystrokes. HELP can be called recursively, which means, you can get help on previous help on another help subject. You can even edit the help texts, add remarks, examples etc. **DM 125,-**
Upgrade from QD V4 DM 30,-
All our products which contain SuperBASIC extensions will be updated so that they will have files which you add to your HELP System so that help is provided for additional Procedures/Functions!

HyperHELP BASIC   *NEW! NEW!*
This product gives you instant help in SuperBASIC! The price is much lower for those who program in SuperBASIC and do not require a full QD (although it is very useful). HyperHELP can be executed, put onto HOTKEY or woken from a Button. It displays the full set of SuperBASIC procedurs, functions and keywords currently existing in your machine, plus additional help on operators, identifiers etc. Simply click on the word on you get the full description, use of all parameters plus examples. FORGET ABOUT YOUR MANUALS for parameter description! You get complete help on SuperBASIC, in German and English. The help files can be updated with any editor, Quill, Text87 so that you can update and add remarks whenever you want. **DM 49,-**

QMenu – the Menu Extension   NOW IN VERSION 4!   *NEW!*
QMenu is a very easy to use interface with pre-defined menus (e.g. multi-column file-select, simple-choice boxes, select from lists, error handling). These menus may be used from SuperBASIC, machine code and other languages. New features: the directory name is (optionally) not fully listed, i.e. only the names INSIDE the subdirectory are given, allowing for much more files to be listed in the window. New DO AND REPORT menu. Brandnew feature: pre-defined directories and Extensions may be changed and configured at run-time! More examples, improvements here and there, which makes the Menu Extension getting mature. **DM 39,90**
Update with new manual   DM 16,-   *NEW!*

QDOS Reference Manual – This book is a must for all m-code programmers. It explains how to use QDOS, all traps and vectors, the Thing System, the HOTKEY System II and much more. It points out which features work on a QL, an Emulator and how to write compatible for future operating systems. DIN A5, over 170 pages. **DM 89,90**

QPTR – The Pointer Environment Toolkit Revised manual which describes how to use the Pointer Interface and the Window Manager from SuperBASIC and machine code, even how to setup standard CONFIG tables. QPTR comes with examples on disc. All necessary keys, macros and extensions for SuperBASIC are supplied. **DM 92,-**

FLP/RAM Level 2 – Replacement EPROM for SuperQBoards (V1.17 onwards, with & without mouse) or TrumpCard (please specify)! Real sub-directories! QL-Emulator and Gold-Card compatible! With ATR-device (to read and write MS-DOS/ATARI discs). About twice as fast, with improved slave-block-handling! (Not JM ROMs!) **DM 56,-**

QDesign II – Graphic- and Design-program
For all 9 and 24 pin printers, Deskjet and Laserjet   **DM 150,-**
Font-Vector-Editor for QDesign   DM 60,-

SER Mouse – driver for a serial (e.g. DOS) mouse connected to one of the SER ports of the QL which then mimics the QIMI interface. In addition, if you have a three-button mouse the following additional features are available: ESC, Wake, Sleep. Supports HERMES now. **DM 40,-**

QSUP – System Utility Package	**DM 79,90**
FiFi – the FileFinder	**DM 49,90**
DISA – Intelligent Disassembler	**DM 90,-**
SYSTEM – System Tools for QDOS	**DM 90,-**
Thing & EPROM Manager	**DM 61,50**

You can now run QDOS on a Mega STE
The new QVME display card, which fits inside the VME bus of a Mega STE, is ready now! No soldering, you just plug it in. Fully programmable screen resolutions, from 512x256 pixels up to 1024 by 780 (even during run-time!) and programmable display rates etc! Please write for more information.
QVME-Card and Emulator software   DM 695,-

Adaptor QVME into Mega ST   DM 136,-

QL-Emulators – history and programming documentation. Not a user manual (which comes with the emulator). **DM 13,-**

E-Init software for QL-Emulator: loads, runs and initialises a lot faster. Can boot completely from harddisk, with auto-start facility and a lot more. New manual, new disks. **DM 49,90**

A Spreadsheet running under the Pointer Environment!
QSpread is completely mouse- and/or keyboard-controllable and uses, of course, the Menu Extension. Windows may be enlarged up to the maximum screen area (think of QVME), the application window may be split in up to three different horizontal and vertical sections, giving 9 independent controllable areas. Every cell may be formatted independently, with many options (justification, decimal point etc.) and with preview. The monetary symbol may be longer than one character, e.g. DM. Sum- and other often-used macro-functions. The size of the sheet is only limited by memory (16000 cells need about 400kBytes). Block handling and block entry is very easy and useful, especially if you have a numerical pad: you select the block and enter the values one ofter the other. They are automatically place in the right order. No cursor-key-action necessary! New: cellname-enquiry, echo-function, different rounding methods. Many additional functions, which belong to today's standard-equipment: Help, Button-function, use of the Scrap, all standard file operations, calculation order row or columns etc. **[V1.12] QSpread with comprehensive manual DM 169,-**

Updates: Our update policy is very generous: updates on most products are free! Upgrades (i.e. major improvements on the products) are available at small charges. In general you only have to pay if new manuals are required. For updates and upgrades, just return the original disc and enough return postage (none, if updates come with an order, **DM 6,-** for up to 5 discs or **DM 12,-** for more.
Upgrade to QPTR (with new manual)   DM 40,50
New Emulator manual   DM 16,-

EASYPTR II – Create your own PE menus & sprites, use them in your own SuperBASIC or machine-code programs. Creating Menus was not easy, until now!
Part 1 Basic with menu generator, sprite editor etc. **DM 99,-**
Part 2 SuperBASIC Toolkit, Appendix manager & many examples **DM 49,-**
Part 3 Library routines for C and Assembler, source code generator **DM 49,-**
(if you order part 3, return disks 1 & 2 for a free update)

ZX8301 DM 19,90	**ZX8302 DM 17,90 Kbd membrane DM 31,-**
Diamonds DM 35,90	**BrainSmasher DM 45,90**
Arcanoid DM 35,90	**Firebirds DM 35,90**
SuperGamesPack DM 90,-	**The lonely Joker DM 52,90**
QShang DM 45,90	

Brandnew game for the Pointer Environment: The Oracle
The Oracle is an ancient tactic-puzzle, where you do not have to be fast but clever! You have to fill a number of tiles into a field, but there are various rules how to do it. If you can place all the tiles you get a bonus – if you obeye special rules you can get much more points! The first person who solves the puzzle will be able to buy goods for free from Jochen Merz Software – the amount of the sum depends onthe score! Every game is different, you'll never be bored! Other features: high-score table, hints for next move. **DM 49,90**

Please add **DM 14,-** for postage and package (Europe) or DM 14,- for one item and DM 7,- for every further item (Overseas). **No extra charge on credit cards!** All prices incl. V.A.T. (15%) E&OE.

DILWYN JONES COMPUTING

41 BRO EMRYS, TAL-Y-BONT, BANGOR, GWYNEDD, UK, LL57 3YT
TELEPHONE: (0248) 354023

NEW QL SOFTWARE FOR 1993

LINEDESIGN
By Nathan van der Auwera

A real vector drawing package for the QL, which allows you to draw, print, scale or rotate graphics or text without losing crispness or sharpness. Everything is done with lines and smooth Bezier curves with lots of special effects. Scalable outline fonts are used for high quality text output in any size, freely changeable. Supplied on 10 (yes, ten) disks, with several disks of just fonts and clipart! Prints to Epson compatible dot matrix printers, to HPDeskjet printers and to Laserjet 2 printers. Sample printouts available, send SAE (UK) or an International Reply Coupon. Available March 1993.
PRICE: £100.00

DATA DESIGN 3
By Joachim van der Auwera

Version 3 of Data Design introduces disk based files so that you no longer need to be restricted by the free memory on your computer. New version has many improvements over the old Data Design 2 (still available). Convert Archive files to Data Design, and now convert Flashback files too. Data Design 3 is fully multi-user, several jobs can safely manipulate the same file. Can hold text, numbers, screens (raw data) etc. if you want! The Applications Programming Interface (which allows it to be programmed from C, BASIC or assembler) is available separately.

DATA DESIGN price   £60.00

DATA DESIGN APPLICATIONS PROGRAMMING INTERFACE£20.00

UPGRADES-See price list opposite.

DJTOOLKIT
by Norman Dunbar

An extremely easy to use, short toolkit mainly intended for QLiberator users, but can also be used in standard SuperBASIC. Over 30 really useful extensions to BASIC. No waste, only about 3 kilobytes of commands and functions you can really use! Can be used free in compiled commercial or public domain programs! Simple to link to QLiberator compiled BASIC programs. Set of demonstration routines to help you to learn to use the new commands.
PRICE only   £10.00

SCREEN DAZZLER
by Bruce Nicholls

A type of screen saver (used to help to protect a screen from burn-in when a computer is not used for a time while switched on). Most QL screen savers just blank off the picture, but this one can activate various graphics displays to use instead. Write your own displays too, by following the guidelines in the manual.
PRICE: £15.00

EASYPTR III
by Albin Hessler

New version 3 of the pointer environment programming aid. BASIC programs using menus and pointers can be written and compiled with the QLiberator compiler. Easyptr is now available in three parts. Part 1 (base version) is for use with BASIC and consists of on-screen menu generator, sprite generator and simple commands to set up and use the menus in your own BASIC or compiled programs. Part 2 adds a BASIC toolkit and Appendix Manager. Part 3 adds C library routines and a source code generator called Easysource.
PART 1 (budget version)   £41.50
PART 1 and PART 2   £60.50
PART 3   £20.00

DILWYN JONES COMPUTING

41 BRO EMRYS, TAL-Y-BONT, BANGOR, GWYNEDD, UK, LL57 3YT
TELEPHONE: (0248) 354023

QL SOFTWARE

NB PLEASE NOTE THE MEANING OF CODES IN
SQUARE BRACKETS BELOW:
[R] RAMDISK REQUIRED
[F] AVAILABLE ON FLOPPY DISK
[M] AVAILABLE ON MICRODRIVE
[128K/512K] MINIMUM MEMORY REQUIRED
[PC] FOR IBM PC AND COMPATIBLES.
[TK2] TOOLKIT 2 REQUIRED.

CATALOGUE

THE CATALOGUE CONTAINS MORE DETAILS OF
THE PROGRAMS. CALL FOR A COPY, OR ASK
FOR A COPY WITH YOUR ORDER.

SOFTWARE UPDATES

In response to cutomer requests, we have produced a
sheet showing current version numbers and details of
recent changes to most of our software and details of
how to upgrade. This is available free on request with
orders, or send a stamped, addressed envelope (UK) or
International Reply Coupon (other countries) for a copy.
It is updated about once a month.

DEMONSTRATION VERSIONS

Demo versions are available for some of our programs.
They cost £2.00 each and this cost is refundable against
the full price of the full version, if you later decide to buy
it. Demos available of Discover, Textidy, Banter,
Image Processor, S_Edit, The Gopher, Winback, Text 'N'
Graphix, Qractal screen pictures, Screen Compression,
Address Book and Label Printer.

QL SOFTWARE PRICE LIST

PLEASE NOTE: There have been some price changes in
1993. The price of Fleet Tactical Command have been
reduced, while the prices of the new versions of Easyptr
and Data Design have increased in price.

FILE TRANSFER

DISCOVER [F256k]	£20.00
MULTI DISCOVER [F 256k]	£30.00
TEXTIDY [F M 256k]	£15.00
OPD INTERCHANGE	£15.00
[F M 256k]	
QL-PC FILESERVER	£24.50
[F 128k]	

LEISURE

SOLITAIRE [F M 128k]	£15.00
CRICKET SECRETARY	£12.00
[F M 128k]	
QUESTION MASTER	£10.00
[F M 128k]	
QUIZ SETS each	£5.00
FLEET TACTICAL COMMAND II QL	£39.95
[F 512k]	
FLEET TACTICAL COMMAND II PC	£49.95
[PC]	
COMBINED QL & PC VERSIONS	£69.95
FTC2 DATA PRINT UTILITY	£9.95
[F 512k]	
THE FUGITIVE [F512k]	£9.95
COCKTAILS WAITER	[F384k]£10.00
COCKTAILS WAITER [PC]	£15.00
Version altered to run on Archive on a PC by the author of Cocktails Waiter.	
RECIPE SETS each	£5.00

PROGRAMMING

S_EDIT [F384k]	£20.00
EASYPTR III [F256k] NEW!!!	
Part 1+2	£60.50
Part 1 only (budget version)	£41.50
Part 3 (C library etc)	£20.00
DISA DISASSEMBLER [F256k]	£29.00
BASIC REPORTER [FM128k]	£10.00
BUDGET QLIBERATOR COMPILER	£25.00
[F M 128k] BASIC compiler for unexpanded QL	
QLIBERATOR BASIC COMPILER[F 256k]	£50.00
DJ TOOLKIT [F M 128k]	£10.00

NEW!!! For use with QLiberator or in BASIC. Over 30
simple to use BASIC extensions covering file handling,
memory handling, string handling and functions to check
screen base address, system variables, etc. Only 3
kilobytes long - can be distributed free in compiled
commercial or public domain software. Not as
comprehensive as our MegaToolkit, but easier to learn
and much cheaper to buy!

QLOAD & QREF UTILITY	[F M 128k]	£15.00
MEGA TOOLKIT on disk		£25.00
on EPROM cartridge and disk		£40.00

FILE HANDLING

LOCKSMITHE	[M 128k]	£14.95
4MATTER [M 384k]		£23.50
TOOLCHEST [M 256k]		£14.95
FILES 2 [F M 128k]		£12.00
FILEMASTER	[F M 512k]	£12.00
THE GOPHER	[F M 128k]	£12.00
WINBACK [F 256k]		£25.00

DISPLAY SOFTWARE

BANTER [F512k]	£25.00
VISION MIXER 1 [F 512k]	£10.00
VISION MIXER PLUS [F 384k] £22.50	
PICTUREMASTER [F 256k]	£15.00
PICTUREMASTER PLUS[F 384k]£20.00	
UPGRADE TO "PM PLUS"	£5.00

PRINTER DUMPS

SIDEWINDER PLUS [F 512k]	£24.95

All-singing all dancing screen and page dump utility for 9
and 24 pin dot matrix printers.

GRAPHICS

LINEDESIGN [F 896K]	£100.00

NEW!!! FROM PROGS OF BELGIUM!!!
At last, a real vector drawing program for the QL! All
drawing is done with lines and smooth Bezier curves and
can be scaled up or down without loss or precision. Uses
vector fonts for excellent variable sized text. Prints to HP
DeskJet, LaserJet 2 or Epson compatible dot matrix
printers. This massive piece of software is supplied on 10
(yes, ten) disks including lots of vector fonts and clipart.

THE PAINTER V4.04 [F 512k]	£25.00
THE CLIPART [F 128k]	£12.00
PICTORIAL INDEX FOR THE CLIPART	£4.00
QRACTAL [F512k]	£20.00
QRACTAL SCREENS	£2.00
IMAGE PROCESSOR 2 [F512k] £15.00	
PD2 CLIPART [F128k] £10.00	
SCREEN SNATCHER [FM128k]£10.00	
TEXT 'N' GRAPHIX [F 256k]	£20.00
TRANS24 [F M 128k]	£10.00
SCREEN COMPRESSION [F M 128k]£10.00	

NEW!!! Allows you to load and save QL screen pictures
in compressed format, using a lot less space on disks or
cartridges. Supports several formats.

TEXT

QTYP 2 [F512k]		£29.95
BIBLE TEXT DISKS, PLAIN TEXT FORMAT£20.00		
BIBLE TEXT DISKS, QUILL FILE FORMAT £20.00		
[F 512k]		
SPELLBOUND	[F M 384k]	£30.00
SPELLBOUND SPECIAL EDITION [F512k] £50.00		
UPGRADE TO SPECIAL EDITION		£30.00
Please return master disk / cartridge when upgrading.		
QUICK POSTERS [F M 128k]		£10.00
For use with Star LC, XB and NL printers.		

DATABASES

ADDRESS BOOK/LABEL PRINTER		
[FMR384k]		£15.00
DATA DESIGN 2 [F512k]		£50.00
DATA DESIGN 3 [F 512k] £60.00		
NEW! Version 3 of Data Design		
DATA DESIGN 3 API [F512k]		£20.00
(the API is the new Applications Programming Interface, which alllows you to program Data Design 3 in BASIC, C, or machine code)		
DATA DESIGN 2 TO 3 UPGRADES-return master disk		
Without Applications Programming Interface £10.00		
With Applications Programming Interface £30.00		
FLASHBACK [F M 256k]		£25.00
FLASHBACK SPECIAL EDITION [F256k]£40.00		
QL GENEALOGIST 2ND EDITION[F384k]£30.00		
UPGRADE TO SECOND EDITION		£12.00
Please return master disk with upgrade order.		
BUDGET 128K GENEALOGIST		£12.00
QL GENEALOGIST - POINTER DRIVEN VERSION DUE SOON, WATCH OUR ADVERTS OR CALL TO ASK ABOUT IT!		
DISK INDEXER [F M 256k]		£12.00
DBEASY [F 512k]		£15.00
DBPROGS [F 512k]		£15.00

OTHER QL SOFTWARE

QPAC1 [F 512k]		£19.95
QPAC2 [F 512k]		£39.95
QTOP [F 512k TK2]		£29.50
PRINTERMASTER [F M 128k]		£20.00
HOME BUDGET [F M 128k]		£20.00
REMIND-ME [F M 128k]		£12.00
REMIND-ME PLUS [F M 128k]		£20.00
SCREEN ECONOMISER	[FM128k]£10.00	
SCREEN DAZZLER [F 384k]		£15.00

NEW!!! A type of screen saver to protect your screen by
activating graphics display programs or routines when the
keyboard is not used for a few minutes. Screen
Economiser can only blank out the screen, this one can be
used to create any effects you wish - the display routines
can be written in compiled BASIC, for example using the
guidance supplied. Some effects are supplied on the disk.

SLOWGOLD [F128k]		£5.00
TASKMASTER [FM384k]		£25.00
DISK LABELLER [F256k]		£10.00
THE CAT [FM128k]		£5.00
ROB ROY BARGAIN PACK	[FM128k]£10.00	
NB For 9 pin dot matrix printers only.		

PAGE DESIGNER 2 PLUS

We apologise for the embarrassingly long delays with this
project - it has now been handed over to another author
to complete, with an expected completion date of the end
of March 1993 or early April. The program will be
pointer driven and the price and specification otherwise
similar to that previously advertised. If you are having
problems with an old version of Page Designer 2 (e.g.
endless In Use errors when used on a Gold Card or ST-
QL emulator) we can supply a free temporary upgrade to
V2.20 of Page Designer 2 to cure these problems pending
the final release of PD2 Plus, simply send your master
PD2 disk as proof of purchase.

THE SMALL PRINT! POSTAGE AND PACKING CHARGES: Software is sent post-free to UK addresses. To other countries, please add £1.00 per program for postage and packing (sent by
airmail where possible). PRICES: All prices are shown in UK Pounds Sterling. PAYMENT: We can accept payment by cheque (in UK Pounds Sterling currency only, drawn on UK branch of
a bank or building society, by Eurocheque with card number written on the back, Postal Order, or by these credit cards: VISA, ACCESS, MASTERCARD, EUROCARD or by CONNECT card.
Please state the card type, number, expiry date, your address, and sign orders sent by post. We can also accept orders paid by credit card over the telephone. There is an answering machine for when
I am unable to answer in person so that I can call you back later. Goods remain the property of DJC until paid for in full PLEASE STATE IF YOU REQUIRE SOFTWARE ON 3.5 OR 5.25 INCH
DISKS OR MICRODRIVE CARTRIDGE.

QL-2000 TOWER CASED QL
ERSINGEN, GERMANY - JURGEN FALKENBERG

All you need in one box, expandable yet affordable, with plenty of space for tinkering and upgrading. With the QL-2000 we are presenting a completely new concept for expansion of your QL system to a compact, professional reliable unit.

We supply the QL-2000 as a complete machine, or a low-priced assembly of your QL system, or as a low-cost kit for DO-IT-YOURSELF assembly including all parts needed. A bit of soldering and screwing are required to be done with the D-I-Y kit, we supply detailed instructions.

The QL-2000 consists of a modern mini-tower case the dimensions of which are: (W xH x D) 5 x 13 x 17 inches, while compact it can hold two 3.5" floppy/harddisk frontside socket, two 5.25" floppy/harddisk frontside socket, plus one 3.5" harddisk internal socket with room for another 5.25" internal harddisk.

If you require microdrives, both can be installed in one of the 5.25" front sockets. A 200W switching power supply (110-120 V or 220-240V AC input) ensures a reliable central power supply with a front panel on/off switch.

All connections are clearly located on the back side of the case and include monitor power supply output, monitor signal, serial ports, joystick, network and external keyboard connections.

The QL-2000 is designed to handle just about any QL system, please note the following prices:

QL-2000	D-I-Y kit	DM 399
QL-2000	Assembled with your QL system	DM 699
QL-2000	Complete Machine	DM 2499

The complete machine is supplied with a Gold Card, 3.5" 1.4MB floppy, 3.5" 20MB harddrive, and 102 key keyboard. For additional information contact us at:

JURGEN FALKENBERG COMPUTER TECHNIK
Thanweg 36
W-7539 Ersingen
Germany   Telephone/Fax: 07231 81058

(Editor's Note: We will have a QL-2000 kit built and on display at the MIRACLE in NEWPORT Show on the 5th of June.)
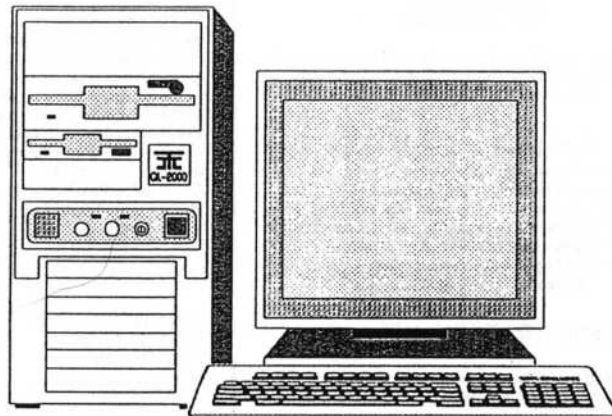
ERGON DEVELOPMENT - WHO ARE WE ???
REGGIO EMILIA, ITALY - MARCO TERNELLI & DAVIDE SANTACHIARA

To answer the first question, we are Marco Ternelli and Davide Santachiara and together we're Ergon Development. Our interest like yours is in the QL/QDOS and we're writing some really interesting programs (see our advert elsewhere in this issue) for this system. Now about us.

MARCO TERNELLI - I bought my QL in 1986, and being an old Spectrum owner I was fascinated by the Sinclair machines, and especially the innovative power of the QL. In the begining my system was comprised of a 128Kb QL, monochrome monitor, and Seikosha 800 printer. It wasn't easy to do serious things with such a system, but it worked well. My second quantum leap was adding a QINTERAM 640Kb internal expansion; a lot of things were now possible, including trying to do massive multitasking... At this time, I was studying computer science at a secondary school, so you can imagine why I was so interested in the QL. In fact I did my secondary school thesis (a thesis was required in the school I went to) on the QL; I wrote a real big one, about 430 pages with Quill, and on micrdrives too!! Really expensive, if you consider the number of cartridges needed for the thesis, and then there was those for backups.

In July '87 I earned my diploma and started studying Computer Science at one of the best known universaties in Italy. This was difficult but I still had time for my QL. I bought a Kempston disk interface and immediately realized how much easier my thesis would have been using disks instead of microdrives. Meanwhile, I also realized that my internal memory was too slow, it actually slowed down the QL by a 20/30% factor, so I needed to transfer the ROM code of the QINTERAM into RAM. The result was version 1 of a program named DEA. In the beginning it was a simple memory disassembler, version 2 started implementing intelligent disassembly and allowed me to join my purpose, I had intended it for my use only, so it had a very crude user interface.

In the meantime, I read a message from Davide who was looking for other QL programmers in an Italian magazine. He thought my progams were marketable with some improvments. So in 1990 I wrote version 3 and 4 of DEA and version 2 of QLIBRARY a superbasic source file manipulator.

In 1991 I received my university degree and finally had the time to work on my secret dream: a SPECTRUM EMULATOR for the QL. The first working version came in January '92 and since then four Spectrum emulators have been written: ZM/1 a public domain version, ZM/2, ZM/3, and ZM/hT which are commercial offerings. Why so many emulators ?? ZM/1 and ZM/2 are "STANDARD" emulators, while ZM/3 is a Z80 "threaded code compiler", and ZM/hT is a "dinamic Z80 compiler, it translates Z80 code into 68000 code which gives a very fast emulation process.

At present I'm doing military service at the Naval Academy (as an assistant in a computer course for university students), and luckily I have access to many different computers. I still LOVE programming my QL, but the one thing I hate is when people visit my room and laugh seeing my QL, and ask: "What a funny keyboard, but where is the cabinet with the motherboard...??"

DAVIDE SANTACHIARA - I'm in my fifth year of engineering and apart from the QL I enjoy playing basketball and playing the piano. My first contact with computers

ERGON - (CONT'D)

was with a simple HP-33 programmable calculator (49 lines) when I was 12 years old. I really liked it and amused myself writing simple programs. Later on I had the chance to work on the more powerful HP-41C and then a real computer (not mine) , it was a

Hewlett Packard 68000 based machine, really powerful for its time. I wrote dozens of programs for that machine, mainly mathematical ones (polinomial interpolations and so on). It was miles ahead of the standards at that time (PC XT, C64, ZX81, APPLE II, etc.) and I was lucky to have the opportunity to work on it.

Finally in 1986 my father decided to buy me my own computer, and the choice was the Sinclair QL. As many others, I started with a Prism monitor and a 9 pin Star printer (both of which are still on my desk). One year later I added a Spem 640Kb internal expansion and a Kempston disk drive interface with 2 Teac disk drives.

"ERGON DEVELOPMENT" was born in 1988 when I started distributing simple programs here in Italy. For example, TOTOBAZ'N'R was a football pool manager, PT MANAGER was for address archiving, STOREHOUSE was for storehouse activity and then my well known program MUSIC MANAGER. In 1990 I met Marco Ternelli and started distributing his programs as well.

Being a university student Ergon doesn't have the means to advertise widely, however we are proud to be one of the few software houses quietly working on the QL scene, and we surely intend to support the QL/QDOS in the future. I'm waiting with great excitation for the forthcomming QXL from Miracle. The PC will be my slave and the QXL my "girlfriend".

What else can I say, from a human point of view the QL has changed my life, I've gotten to know a lot of people and I've found the QL community to be really a great family. I especially enjoy the shows I have attended and they will surely be remembered as some of my unforgettable experiences.

FLOPPY DISK DRIVE TROUBLES AND MY SOLUTION
SHELBY TOWNSHIP, MICHIGAN, USA - JOHN J. IMPELLIZZERI

After experiencing some problems with my QL's disk drives and troubleshooting the problem, I wrote this account of what I found and what I did. Hopefully my experience will help someone else.

When I first added disk drives to my QL, I had a Cumana interface and a single 5.25" drive in a dual drive case. Later on I added another 5.25" drive. Both drives were brand new and I never had any trouble with them.

FLOPPY TROUBLES - (CONT'D)

Not long ago I replaced the Cumana with a Gold Card and about the same time obtained two 3.5" drives (Thanks Don!). The 3.5 drives were used but tested OK. At first I replaced one of the 5.25 drives with the 3.5. I started transferring files to the new small disks. After awhile I replaced the other 5.25 with a 3.5. Both 3.5's were in the dual drive case. Since the Gold Card can handle three drives I put one of the 5.25 drives in a single drive case. This was when the problems started. The 3.5 drives seemed to intermittently act a little flaky. Sometimes they would corrupt a file or a whole disk. Each would work great by itself but not with both drives hooked up. Since the Gold Card was new and worked OK with two 5.25 drives I ruled it out as the problem.

Doing some more investigating I found that if one drive was doing something (formatting, loading a file, etc), and a disk was inserted into the other drive, both drives would develop problems and make funny noises. Since the only other thing in common they had was the power supply in the case, I hauled out my digital VOM and oscilloscope.

I found that while the 5.25 drives used the 5 volt supply for their logic circuits and the 12 volt supply for their motors, the 3.5 drives used only the 5 volt supply for everything. My first thought was that maybe the 5 volt supply was marginal and couldn't handle the extra load. Monitoring the 5 volt line showed low voltage (4.7v) and high ripple (1v p-p) with both drives active. It was OK with only one drive active. I then measured the amount of current each drive took when active. Even with both active the power supply should have been able to handle the load. (According to the supply specs: 12v @ 1.2A and 5v @ 1A). Both drives active only loaded the supply to about 70%. I took the power supply to my bench and tested each supply (12v and 5v) with varying loads while monitoring their outputs.

The 12v supply could handle full load and then some without a problem. The 5v supply however had problems with only a 50% load on it. I thought maybe the 5v regulators were bad, but further testing revealed a low input voltage to them under load.

I studied the design of the power supply and it seemed to have a strange way of feeding the 5v regulators. I modified it by using the input to the 12v regulators to help feed the 5v regulators. Double checking the outputs so I wouldn't fry the disk drives, Gold Card or QL, I found that now the 5v supply was very solid, it would tolerate a 150% load without even flinching. The 12v supply was unaffected.

The 3.5" disk drives now worked great. Since then I have replaced the older 3.5' drives with new Teac 3.2 MB drives and these continue to work just fine with no problems.

Since the QL uses external drives with their own power supply, the QL can be OK and the drives can still have problems.

If you have problems with flaky or intermittent drives, first check the obvious such as loose plugs, dirty heads, etc. Then you may want to check the output of your power supply (or have someone qualified and with the proper equipment do it). It just may not be up to par.

Ergon Development *Feb 1993 price list*

Davide Santachiara, Via Emilio De Marchi 2, 42100 Reggio Emilia, Italy

All the prices are given in ITL (Italian Lira). To send a foreign currency cheque use current conversion rates (eg 1.000 ITL=0.45£=1.08 DM=0.66$ - ask your bank as these values may change) but remember to add 10.000 ITL to cover our bank conversion charges.

ZM/x system plus-2 NEW: Spectrum 48K emulators. This package comprises ZM/2, ZM/3, BACKUPPERS and ZM/ACCESSORIES (ZM/DISK UTILITIES + ZM/DIGINET). ZM/2 & ZM/3 are sold together as they are complementary. ZM/2 is an emulator and is the most compatible while ZM/3 is a threaded code compiler so ZX games run faster. Specifications: Fast emulation (ZM/3: 50/80% the speed of a real ZX on a 16 MHz Gold Card); Smooth sprites movement; True ZX sound through network port; >95% Compatibility on ZM/2 (over 300 games tested); Interface 1 emulation (on ZM/2); True tape emulation (ie. EAR and MIC port emulated through the Network port). Supervisor which allows you: To manage ZXQL tapefiles (dir, copy, rename, delete): Z80 Monitor facilities (trace, dis/dump, breakpoint, alter regs.): Jobs management: _Z80 snapshot load/save: Emulator parameters fine tuning and much more. Just think to choose your favourite ZX game from a QPac 2 style menu and then load it from your fast QL devices. The ZM/x system comprises >40 pages manual, 2 free upgrades (just return your master disk), ZX & QL programs to transfer your ZX programs into the QL via net or ser port (BACKUPPERS - QL <-> ZX IF-1 serial cable is available for 20.000 ITL), utilities to convert Plus-D, Disciple or Opus Discovery disks into a suitable format (ZM/DISK UTILITIES) and finally a utility to read and convert directly ZX tapes from the network port - just connect your tape recorder (ZM/DIGINET.   ). **The ZM/x system plus-2 now costs 60.000 ITL. The upgrade costs 15.000 ITL.**

ZM/hT system   NEW: ⌐ NOW WITH KEMPSTON SINCLAIR 1&2 CURSOR JOYSTICK EMUL. The ZM/hT system comprises the full ZM/x system (as explained before) plus the new Z80 compiler ZM/hT (high technology). **ZM/hT converts dinamically Z80 code into fast 68000 machine code!** It offers you many option to optimise the code produced (speed, compatibility, screen redrawing smoothness...). However if you do not want to learn its more advanced features there is no problem: ZM/hT is configurated to run without any user intervention and so you can forget to read the comprehensive manual. It is just sufficient to choose the program to be loaded. With ZM/hT you can play games on a 16 MHz Gold Card at a speed very similar to a real Spectrum (70% to 130%). Amazingly compatibility is very high, more than 85%, better than ZM/3 and quite similar to ZM/2. We know only two programs similar to our ZM/hT: a transcompiler from VAX to ALPHA (which has a 64 bit processor!) and a PC compiler for a popular mainframe. If you have a Gold Card and you want to play the hundreds of fantastic Spectrum games on your Gold Card QL at true ZX speed, then the ZM/hT system is your best choice. **The upgrade from the ZM/x system costs 40.000 ITL. The ZM/hT system (ZM/2,3,hT, backuppers, disk utilities, diginet, 2 free upgrades) costs 90.000 ITL.**

MasterBasic plus-1: (V1.41). The ultimate tool for the SuperBasic programmer. It allows you to speed-up drastically the construction/debugging of your programs. Search and reference any variable, tokens combination, string, FOR and SELect loop, procedure, function, on the whole program or only inside selected routines; join lines, view return stack ... You see in a pop-up "Line Menu" all the referenced lines and the number of occurences in each line. Then you can edit or list the desired lines with a simple keypress. Just think that there is a program sold for 25£ which does the same things as the MBS Profile option! But MasterBasic offers you at least other 40 powerful options. Full specifications are given in a 3 A4 pages leaflet. MasterBasic is compatible with Minerva integer tokens and can work with multiple copies of Minerva MultiBasic. Now fully user configurable with auto-sleep option under PE. MasterBasic costs now 45.000 ITL with >30 pages manual. *"The package is extremely easy to use and well thought out, and even the more casual SuperBasic programmer should get a lot of use out of it"* QLWorld 6/92

QLibrary Manager: (V2.1) A useful and professional addition to MasterBasic. Not a simple library manager but a clever SuperBasic source code extractor/manipulator. Do you need a routine from a SuperBasic program written some time ago? QLM will extract it for you, just tell him what you need: there are thousands of possible option combinations in the Extraction menu! Eg. extraction of routines called by selected ones, inhibit extraction of certain routines. It can extract remark, Turbo or QLiberator directives ... **QLM costs now 40.000 ITL with >20 pages manual.** *"Overall the package is useful for SB authors and should enable new Basic programs to be created quickly, using experience and routines already created for earlier programs..."* QLWorld 8/91

DEAssembler v5.x plus-1 NEW: DEA is a versatile intelligent disassembler designed to make disassembly as easy for you as possible. Just load the desired file and DEA will do all the work. It usually disassemble >90% of any program without user intervention. It can also extract AUTOMATICALLY Toolkit commands ready to be re-assembled. Multi data-types are recognised with automatic selection by means of I.D.S (intelligent default selection) algorithm, providing auto-recognition of SB extensions, ROM headers, strings, QDOS/SMS-2 calls (DEA reports them in the output file). Config tables and Things extensions. DEA's incredible degree of automatic decoding allows people who do not know anything about machine code, to use it with very good results. The degree of quality and readibility of generated source code is impressive. **DEA costs 55.000 ITL with >35 pages manual. Upgrade from v4 costs 15£.** *"This program is certainly the most versatile machine code programming utility I have seen on any computer to date"* QLWorld 4/92

Open World: (V2.1) Graphic conversion utilities. Load into the QL GIF files (present in enormous quantity in all of the BBS), TIF (scanners), IFF (Amiga) or CUT images of any dimension. Convert them into 4, 8 colours (grey levels) or monochrome QL images (with a powerful dithering algorithm - great for DTP applications). **Open World costs now 35.000 ITL** and is supplied on two disks with some beatiful images, a QL to PC screen converter (file saved as GIF) and a program to read QL disks on MS-DOS v5, SUN, VAX, UNIX...

MusicManager: (V1.2) Simple program to create and play music on the QL. It can create files which can play in the background of your games. Some demo musics (Chopin, Beethoven...) included. Psion style operation. **It costs only 20.000 ITL** with 8 pages manual. *"If you want to produce something of a semblance of music on the QL, then this is a useful package"* QLWorld 6/91

Please add 12.000 ITL for airmail postage (Europe) & packaging (25.000 ITL airmail p&p outside Europe). Acceptable forms of payment are: Eurocheque in ITL; Postal order in ITL (send a copy of the receipt); Foreign currency cheque (ie. not in ITL), please add 10.000 ITL for bank fees. Cheque payable to Davide Santachiara. Discounts: 5.000 ITL off for any 2 progs, 10.000 ITL off for 3, 15.000 ITL off for 4 and so on. **To receive our disk with PD or demo version of our programs send 6 IRCs. This disk is really worth having:** it contains over 1.5Mb of data in compressed form! All of our programs (except MusicManager) need 512Kb expansion and are based on our powerful Menu System II, a QPac 2-style menu system. They are compatible with Minerva and the P.E. They are written with clear English messages and the manuals have been improved in the UK. When ordering please state your QL configuration.

THE ZM SPECTRUM EMULATION PACKAGE
(ZM1, ZM2, ZM3, and ZMhT from ERGON DEVELOPMENT)
BERBENNO, ITALY - DR. EROS FORENZI

A little more than a year ago, the Italian software house, Ergon Development started writing a program to emulate the Sinclair Spectrum 48K on the QL. The first version of the emulator was launched at the International QL meeting in Muenster - Germany, in March '92. Other versions followed, with the very latest in January 1993. The Ergon family of Spectrum emulators is now quite stable but has had a huge number of changes & improvements, like most children in real families.

The first emulator, called ZM/1, went into the public domain in June '92, mainly because two more powerful emulators had been developed in the meantime. A version of it was included in QITALY Magazine 22. The very latest ZM/1 PLUS 2 is much better than QITALY's, yet the speed is still roughly the same: 30-35 % of the speed of a real Spectrum, on a QL with 16Mhz Gold Card.

The second emulator, named ZM/2 (PLUS-2 release), is and will remain a commercial program, and is sold together with its bigger brothers (that is, you buy one product and you get two or more programs!). ZM/2 is highly compatible with Spectrum programs (mainly machine language games) and has been recently extended to support Interface 1 shadow rom, with serial port emulation and virtual microdrive emulation (not to be confused with direct reading of Spectrum microdrive cartridges). Its speed is a bit more than ZM/1 and is about 35-50 % the speed of a real Spectrum, as usual on a Gold Card QL.

The third emulator, named ZM/3 (PLUS-2 release), is less compatible than ZM/2 but is faster. It has the same commands and options but it is not a simple interpreter but a semi-compiler (technically speaking, it's a threaded code compiler). It produces pseudo-machine code, half way between interpreted code and true compiled code, and so it's faster. Problems may happen if the emulated program contains self-modifying code (MOST Spectrum games fall in this category), so sometimes the program simply does not run or crashes at a certain point. Yet, ZM/3 tries to trap most of these problems, so every program is always worth a try..... it will work more often than not. ZM-3 speed is quite good: 50-80% of a genuine Spectrum's speed. If you are lucky to have a Gold Card capable of working at 24Mhz you'll be able to emulate a full speed Spectrum (with games this is most important).

The fourth emulator, just launched at the 4th Italian QL meeting on 24.1.93, is named ZM/hT (stands for Zx eMulator High Technology) and is nothing less than spectacular. ZM/hT is a real-time compiler, that is it compiles Spectrum code when you are running it, and then the resultant code is native 68000 machine code..... much faster than ever. Speed is 80-120% on standard Gold Card: really exciting. Compatibility is also very good, much greater than ZM-3's. Oh, yes, some programs (REALLY VERY FEW, and getting down to ZERO thanks to accurate inspection of tricky programs' code) cannot be run under ZM/hT because they contain too many tricks (Spectrum games are full of any sort of complicated & strange & peculiar Z80 machine code programming), but I think that ZM/hT author (Mr. Ternelli) has gone as far as he could (very far indeed, in fact! He is still tracking down games), so don't blame the emulator for not being able to emulate the unpredictable!

The highest compatibility can be obtained by setting to ON option 6 of the

ZM PACKAGE - (CONT'D)

COMPILATION OPTIONS menu (should then read FULL SM CODE CHECK: ON).

Please note that the review version of ZM/hT was one of the first releases. Authors Davide Santachiara and Marco Ternelli told me that later versions are better and better. Out of 100 games tested, ZM-2 compatibility is 99% (more or less the same as Spectator's) while ZM/hT is currently more than 90% and growing. If you consider that ZM/hT is a compiler that gives you a FULL SPEED SPECTRUM, this is really SPECTACULAR.

Another point that deserves mention is the fact that this kind of emulator-compiler is not so commonly found in the software arena. The two other examples that I can remember now, are a transcompiler from VAX MVS code to the ALPHA 64bit RISC chip code, and another similar product for a well known mainframe..... so our tiny QL is likely to be nearer to God than you might think!

The version of ZM/hT I have requires a Gold Card, not just because of speed, but mostly because it needs a lot of memory. ZMhT code is not enormous (210 Kbyte long), but runtime memory requirements for compiling, parsing, room for compiled Spectrum code, etc. are huge, and eventually the running program needs about 1 Mbyte of ram. However the very latest version of ZM/hT works even on 640K or Trump Card QLs thanks to a special "CACHE INDEX address translation table" which allows it to save roughly 250 Kbytes at the cost of a slight performance slowdown with certain programs (usually Basic ones). The actual speed of emulation on a 640Kb QL with some games is about 30-40% the speed of a real Spectrum (if the fastest emulation options and monochrome graphics mode are selected). Please note that before this the fastest speed of any Spectrum emulator on standard QLs (ie. without Gold Card) was about 10-15%, ie. of almost no use.

- What you get for your money:

The three commercial emulators, ZM/2, ZM-3 and ZMhT come in one package, at 90.000 ITL (ITalian Liras - about £40) and is titled the "ZMhT System". It's really a good price, and you should consider that a genuine Spectrum would cost about £50, so it's cheaper to go for a software Spectrum instead of a hardware one..... it even takes up less desktop space!

The package has also several companion programs:

-Utility to transfer Spectrum programs via the SER port;
-Utility to transfer Spectrum programs via the NET port;
-Spectrum tape cassette with the Spectrum programs to activate the SER or NET transfer on the Spectrum side. Please note that you need a Spectrum with Interface 1;
-Utility to directly read Spectrum disks (PLUS D, Disciple and Opus Discovery formats) in QL drives;
-DIGINET, a clever program to read Spectrum tape cassettes through the QL network.

If you wish you can buy the smaller package ZM/X System, that has everything but ZM/hT. That package costs 60.000 Italian LIRAs.

ZM PACKAGE - (CONT'D)

You must also add 12.000 ITL (roughly 5£) for airmail post & packaging in Europe or surface mail elsewhere (25.000 ITL airmail outside Europe). For orders or DEMO versions of ZM emulators contact:

ERGON DEVELOPMENT
c/o DAVIDE SANTACHIARA
VIA EMILIO DE MARCHI, 2
42100 REGGIO EMILIA - ITALY

What use for your old Spectrum then? I have a real Spectrum 48K at home but I no longer use it since I have the ZMs, because one way or another I can run at good speed all Spectrum games I've ported to the QL, and all is much more comfortable. I power up the real Spectrum just to do the transfer, but one day I'll have all my Spectrum games on disk..... so no more packing and unpacking the good old boy.

As soon as I port a game I try it with ZM/hT. Usually it works ok (crashes may happen later on, maybe on certain locations of the game, nobody can tell it in advance... try and see). If a game does not run under ZM/hT I don't try it under ZM-3 because ZM-3 is less compatible than ZM/hT, so I try with ZM/2. If I really need speed I POKE my Gold Card at 24Mhz so that even ZM/2 speed is near to the real Spectrum speed.

If even ZM/2 fails (most unlikely event) I contact Ergon Development and send them a copy of the game. In the past on early releases of ZMs I've encountered some incompatibility with some games, but Ergon have always sorted them out. This way the emulator has got better and better. Now it is really very good and still getting better. Congratulations to its authors!

Technicalities

The ZM emulators happily multitask with or without the Pointer Environment. They are also compatible with either JS or Minerva v1.93 ROMs (and possibly other ROMs & QDOS compatible systems, but I've not checked that).

They usually run off disk drives but can be installed on hard disk. If you have the Juergen Falkenberg hard disk system you should not activate the WIN_EXT command (with a Gold Card QL you need not to!) because it can confuse some versions of the ZMs (they are then unable to build up a list of programs to load and cancel themselves from memory).

There are two graphics modes. The first (faster) is monochrome only and is 256x192 in QL MODE 4 resolution. The second (smooth but slower) is 256x192 in QL MODE 8 with 8 colours..... it looks the same as the genuine Spectrum. Please note that ALL speed ratings in this review are based on the full colour mode. You can switch back and forth by pressing the F4 function key.

The many ZMs options are avaliable through a QPAC-2 style menu system (it's BSD, Ergon proprietory menu system, used in all their programs). The menu system is pretty good and effective. It is called up by pressing SHIFT TAB at any time. You can select

ZM PACKAGE - (CONT'D)

an option by moving cursors and pressing space or enter or you can press the number or letter on the left of each option. You can scroll up and down, by line or by page, by pressing the usual up and down arrow keys with or without SHIFT. The ESC key takes back to the Spectrum screen. If you press SHIFT F4 when in Spectrum basic, a list of Spectrum commands is presented on screen.

Can't remember the QL key where the Spectrum RANDOMIZE command is located? No problem, press SHIFT F4, scroll down a bit, select RANDOMIZE and it will be printed on screen automatically. No more problems with the famous "tokenised" Spectrum keyboard!

Real Spectrum 48K sound is reproduced through the QL NETwork port. Just connect a net cable from the QL net port to the MICrophone jack port of a cassette recorder, power it up and press play on it (do not put any tape cassette in). You'll then hear the real Spectrum sound: the faster the speed of the emulator, the more accurate the sound (it's like slowing down music!). Early releases of ZMs did not have sound. Later ones provide that, and nowadays a QL with Gold Card and ZMhT is able to faithfully recreate the Spectrum atmosphere.

A QL joystick may be used by assigning Spectrum keyboard keys to QL CTL1 port. That way, in games you should select the keyboard option and not a joystick. Then press SHIFT TAB to call ZM main menu and select the option to define keys for GAME MODE. At startup ZMs uses a one-key-at-a-time keyboard routine. That way you cannot press two keys at the same time. This can be a problem in some games where our hero must fire when it's moving. The problem can be solved by switching to MULTIKEY keyboard mode or GAME MODE.

One nice touch is the ability to POKE values directly in the emulated Spectrum memory. Think of infinite lives pokes and you'll soon realise how useful is this option. Cannot pass level 13 of game X? No problem, POKE in the indestructible poke and go ahead!

There are many many other details. These emulators are chock full of options that condition and alter some emulation phases. By use of them you can configure the emulator to suit your needs or to obtain better running of some games.

ZM Backuppers - Diginet - ZM Accessories - Z80 files.

The first problem everyone encounter is: "How the hell do I transfer my Spectrum programs to the QL?". Ergon Development have worked very hard to provide a wide selection of reliable ways to transfer programs from Spectrum to QL. There are 5 ways:

1) Transfer down the QL serial port (you need a Spectrum with Interface 1 and a suitable cable). You have to load the supplied transfer program on the QL and on the Spectrum. You then put a cassette into a tape recorder connected to the Spectrum and follow the instructions onscreen. You cannot transfer headerless files or turbo tape files (but Ergon have also a version suitable for headerless files). Max lenght of each file is about 40000 bytes.

ZM PACKAGE - (CONT'D)

2) Transfer down the QL NETwork port (you need a Spectrum with Interface 1 - the lead is the standard QL NET one). You have to load the supplied NET transfer program on the QL and on the Spectrum, put the program's cassette in the tape recorder and follow the instructions onscreen. You cannot transfer headerless files or turbo tape files. Max length of each file is about 40000 bytes.

3) Direct tape cassette reading with Diginet. You even don't need a real Spectrum this time, just the program's cassette and a tape recorder. Connect the tape recorder EARphone jack port to one of the QL NET ports (you can use the standard QL network lead) and that's it. Activate Diginet from inside the ZM Accessories program and wait. The tape cassette recording quality and the signal amplitude is the critical point (as was on the Spectrum).

With same cassettes Diginet works perfectly, while with some others there could be some difficulties. A small interface circut would be needed in this cases. You can load even headerless files but not turbo tape files. The latest version of Diginet is v3 and can work on QLs with Gold Card, Trump Card, 512K Expanderam or any other expansion with fast external ram, thanks to an automatic calibration algorithm which modifies all Diginet's internal parameters. The algorithm has been recently exchanged with a much better one which has also automatic error recovery (in case of spurious signals). If the signal quality and amplitude is good Diginet v3 can read almost EVERY tape cassette (still only normal speed, not turbo tape files). By modifying manually the internal parameters it is also possible to read turbo tape files if they have standard LEADER and SYNC signals.

4) Direct reading of Spectrum disks. If you have a PLUS D disk interface, a DISCIPLE or an Opus Discovery you'll have possibly many programs on disk. Just run ZM/Accessories on the QL and put a Spectrum disk in any QL disk drive. At present you can read PLUS D and DISCIPLE disks; OPUS DISCOVERY will follow by the end of February.

5) Obtain your favourite game in Z80 file format. The Z80 Spectrum emulator for the PC is quite popular in the MS-DOS world. Its own file format is a snapshot (compressed or not) of the Spectrum memory at any time (ie. even in the middle of a game). All ZM emulators (and also Spectator from Holland) can load and save Spectrum files in Z80 format, so this is an interchangeable format. In effect, ZMs and Spectator own file formats are based on real Spectrum tape/microdrive file formats (you type LOAD "" just like on a real Spectrum), for maximum compatibility. The Z80 file format is useful for programs (most likely games) that do not require further loading from tape (else you'd have to save a Z80 snapshot for every further level loading). Without the Z80 format you would need to transfer twice or more times the same program from the Spectrum to the QL, to be able to run it on different emulators. With Z80 you do the transfer just one time, and then you can read the same file across different emulators.

My own way to transfer Spectrum programs.

I have a 48K Spectrum with Interface 1 and a Microdrive unit. I also have a Multiface 1, a useful device to save a snapshot of the Spectrum's memory at any time. I also have

ZM PACKAGE - (CONT'D)

many many Spectrum games (some of them are really exciting) but they are almost all turbo taped, and so I cannot transfer them directly. I usually load the game on the Spectrum and then I save it again on tape with the Multiface 1. The multiface tape format is at normal speed, and it is also slightly compressed, so that each file fits within the about 40000 available bytes of the Spectrum NET/SER transfer programs. I usually transfer games down the QL NETwork ports and I didn't encounter problems so far. I know that on some QLs the NET does not work. In such instances I'd use the SER port.

Final comments

I'd like to congratulate the ZMs authors, Mr. Davide Santachiara and Mr. Marco Ternelli. They have completed a very brave task. It's not easy to emulate a computer like the Spectrum.... it's even more difficult to get an acceptable speed (speed is important because most of us are going to play Spectrum games on the QL) and good compatibility. Ergon Development have made a highly professional product, well worth the price. If you liked the genuine Spectrum you'll love the ZM package.

QL Spectrum emulators

- ZM-1-2-3 & ZM/Ht from Italy by Ergon Development (Authors: Davide Santachiara and Marco Ternelli)
  ZM-1 is PD and runs at 35 % the speed of a Spectrum (on GC)
  ZM-2-3 and /hT are commercial but reach full Spectrum speed!
  DEMO versions of all emulators are available.

- Spectator from Holland (Author: Carlo Delhez) v1.10, about 35 % the speed of a Spectrum (on Gold Card). It multitasks on its own or under QPAC 2. It is highly compatible with Spectrum games and has few, but useful facilities. It's shareware.

- Speculator from UK (Author: ???) I've not yet seen it in action but Quanta magazine reports that Simon Goodwin said it is "considerably faster" than any other emulator he has seen. I'm sure he has seen just Spectator and/or ZM/1! Expect to see a review of him about the ZM family in a future issue of Sinclair QL World.

- ZX from Russia (Authors: Andrew Lavrov & Anatoly Tishin) about 25 % the speed of a Spectrum (on Gold Card) It doesn't multitask and does not offer many facilities. It is avaliable at 30 DM in the German QL user Club Library.

XTRICATOR - A REVIEW
(SHAREWARE from CARLOS DELHEZ)
SHELBY TOWNSHIP, MICHAGAN, USA - JOHN J. IMPELLIZZERI

Xtricator is a ZX81 emulator for the QL, In other words it allows the QL to emulate or act like its older brother, the ZX81 (TS1000 in the US). You may be wondering why someone would want to emulate the old ZX or how do you get a 68000 series CPU to run Z80 CPU code.

XTRICATOR - (CONT'D)

Many QL users probably started out with a ZX80 or ZX81 (I did). It was my main computer for many years with a lot of time and effort spent making it do things I needed a computer to do. I learned a lot about computers with it. Eventually I moved on to the QL, but occasionally I still miss the ZX81. There was software written for it that has not been duplicated on the QL (to my knowlege anyway). Mostly unique games, although there was plenty of useful applications for it too. Even though I still have my ZX, it's hard to find room to set up two computers at once. Then there is the waiting for the cassette tapes to load, the sometimes finicky connection to RAM packs & printers, etc. Enter Xtricator. With it you can run almost all software written for the ZX81, including machine code, on your QL, taking full advantage of whatever you have added to your QL setup (disk drives, Gold Card's speed & RAM).

I reviewed version 1.21 of Xtricator. This version is dated December 1992. Xtricator requires a QL with at least 256K RAM and a 3.5 inch floppy drive. Toolkit 2, the Pointer Environment and the Window Manager are recommended, but not required. It will multitask and should be compatible with all ROM versions including Minerva. (I only had an MG to test it on).

When you start Xtricator you get a short introductory screen and then the equivalent of turning a ZX81 on - a blank screen while the ZX sets itself up and then the familiar 'K' cursor. From here on you are basically working with a 64K ZX81. For instance, if you were to press the 'P' on a ZX, you get 'PRINT'. Pressing 'P' on the QL gives 'PRINT'. Now there are some differences. The ZX81 has two modes, SLOW and FAST. Xtricator has no FAST mode. SAVE and LOAD commands are directed to the QL's disks rather than a cassette recorder. (More about Xtricator and disks later). LPRINT, LLIST and COPY are directed to SER1.

Another difference is the keyboard. Since the QL has many more keys than the ZX, some of the extras are used in place of some of the awkward keypresses required on the ZX. Others are used to provide a special function such as showing a help screen (handy if you forget which command is on what key on the ZX81, you really have to see this screen, it is a replica of the ZX81 keyboard), or inverting the screen (a common modification to the ZX81). The manual explains that there are two keyboard modes. After reading the text and experimenting with both modes, it really seems quite easy. One mode is better for typing in a program or text while the other seems better for playing certain games.

One problem with any emulator is its speed compared to the system it is emulating. On a standard QL, Xtricator runs at about a third of the speed of a ZX81 in SLOW mode. This is still quite usable with most machine code programs or programs that spend a lot of time waiting for you to type something. On a Gold Card system, Xtricator can run at up to twice the speed of the ZX81. You can adjust the speed by altering the priorities of two of the three jobs that are running via Xtricator. One job does the code translation from Z80 to 68000, the other handles I/O. By adjusting these you can customize Xtricator to the program at hand. A program is included to determine the speed that Xtricator is running at compared to the ZX81.

There are many other advantages to Xtricator. On a ZX81, the ROM is fixed, it can't be modified without extracting the code, modifying it and burning a new EPROM. In

XTRICATOR - (CONT'D)

Xtricator the ZX81 'ROM' is actually held in RAM, so it is easily changed. The 8K-16K area is also easily used, the ZX81 required additional hardware to use this area. By using the QL's disk drives, programs save/load almost instantly and are easily manipulated using QDOS.

You might be wondering how you get a program on cassette to load into Xtricator. There are a few ways to do this. One is to type them in (I admit not a lot of fun). Another is to send your tapes to the author and he will convert them to disk ready to load into Xtricator for a small fee. A better way is to obtain the plans and file server software from the author to link the ZX81 and QL. You build a simple RS232 interface for the ZX81 and it connects to SER2 port on the QL. Load the fileserver software on both machines (from tape on the ZX, disk on the QL) and then the two machines can transfer programs and data back and forth. You load a cassette program into the ZX81, give a command and it is sent to the QL and saved on disk ready to be loaded into Xtricator. I have built this interface (very simple) and used it and the fileserver to transfer programs. It is a very comprehensive system and works very well. From the ZX81 you can access any of the QL's drives, save/load files, create sub-directories, move/delete files, etc. It's like having a very intelligent and fast disk drive interface for your ZX81!

Almost anything that will run on a ZX81 should run on Xtricator. This includes pure BASIC, machine code and even software that gave high resolution screens on the ZX81. Obviously anything that requires external hardware isn't going to work properly. The manual gives a few known incompatibilities and offers fixes wherever possible. Most of these incompatibilities are due to the programs themselves doing something that is not recommended.

Xtricator comes with an excellent 25 page manual that explains in much more detail all of its features and capabilities. If you used to (or still do) enjoy working with a ZX81, you will like Xtricator!

Xtricator is shareware. See IQLR volume 1, #6 for the author's own comments on Xtricator. You can try out the software and if you like it, send in for the registered version. The registered version costs 50 Dutch Guilders. This cost me about $28 US plus the banks conversion charge. With registration (highly recommended), you get the latest version, a laser printed manual, notification of updates and two disks of ZX81 programs that have been converted to disk. A demo version of Xtricator is available for download on most European BBS's that cater to the Sinclair crowd. It is also available on CompuServe via the Computer Club's QL Library (GO CLUB - Library #6). It can also be found on The Serial Port BBS in Mt. Clemens, MI at 313-286-0145. The demo contains info on registering.

Xtricator was written by Carlo Delhez in the Netherlands. He also has written two other emulators. Xtender is a ZX81 emulator for the IBM PC and compatibles. Spectator is a Spectrum emulator for the QL. I have seen both of these programs and they seem to be just as excellent as Xtricator is.

For more information on Xtricator, the QZ fileserver, or the other emulators, contact:
Carlo Delhez - Emmastraat 3 - 4651 BV Steenbergen - Netherlands

LATE BREAKING NEWS

OSBALDWICK, YORK, UK - Miracle Systems has announced 4 different configurations for their new QXL PC CARD. It will be offered as either 1Meg, 2Meg, 5Meg, or 8Meg boards with the sockets in place for future upgrade. Pricing outside the EC is as follows:

1MEG	QXL	£255
2MEG	QXL	£280
5MEG	QXL	£355
8MEG	QXL	£430

LONDON, GREAT BRITIAN - Software87 in co-operation with the PROGS of Belgium have announced a new package designed to take advantage of the PROG'S new vector drawing package LINEDESIGN.

The new software is titled PUBLISHER'S PACK and will allow the use of fonts and clip-art from LINEDESIGN to be incorporated into TEXT87 PLUS4. It's offered either as a stand-alone product or as part of a package .

PUBLISHER'S PACK	£ 39.
LINEDESIGN - PLUS4- PUBLISHER	£ 189.
LINEDESIGN - PUBLISHER'S PACK	£ 119.

PUBLISHER'S PACK is expected to be ready by the end of May 1993.

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plus4 QL Wordprocessing at its Best

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New printers using twenty-four pin, bubblejet, inkjet or laser technologies offer very fast output of the highest quality. They feature multiple proportionally spaced founts in different sizes. They allow precision adjustment of spacing between words and between lines.

On the QL, only **plus4** with its dedicated printer drivers is capable of utilising these advanced features. We mean utilising, not playing with. We mean the ability to calculate automatically the number of words that fit within the margins, justifying with proportionally spaced founts as well as typewriter style fixed pitch. And the facility to vary line-spacing in different parts of the text with automatic calculation of page breaks. Plus page layouts with multiple columns, with equal or unequal widths.

plus4 and its printer drivers put all these features at you fingertips. Select the appropriate driver once and forget about control codes, translation of accented characters, counting the lines to fit the page, calculating the number of characters that fit within the margins--all the tedium that is part and parcel of wordprocessing with other programs.

IMPROVING YOUR PRINTING: Option 2

You may already own a 9 pin dot-matrix or daisywheel printer. Upgrade it with **plus4**! We have written forty dedicated printer drivers for those old favourites. Although not in the same league as far as output quality and speed are concerned, they share some of the features of modern printers. **plus4** brings out the best those printers are capable of.

IMPROVING YOUR PRINTING: Option 3

plus4 drivers mentioned so far are text-mode drivers which print at the fastest possible speed: up to several pages per minute with fast printers. We were not talking about graphic mode printing which is not of the same quality and is hampered by the serial port bottleneck (it can take several minutes per page even with the Gold Card). Nonetheless, we also offer plus4 users a graphic mode driver for dot-matrix printers: **fountext88**. Up to 32 bit-mapped founts can be loaded with **fountext88** and used freely in your texts. It typically takes less than 4 minutes to print a full page which is very fast by QL standards. **founted89** allows you to modify the founts or design your own.

**plus4 requires disk drive and 256 K memory. Leaflet with list of supported printers available on request.**

text87plus4	£79
2488 (drivers required for 24-pin and bubblejets)	£19
typeset90-deskjet (drivers required for all HP Deskjets)	£19
typeset90-Epson (drivers required for Epson Lasers)	£39
fountext88 + founted89 (optional dot-matrix graphic driver)	£39

Software87, 33 Savernake Road, London NW3 2JU

MIRACLE

THE QXL
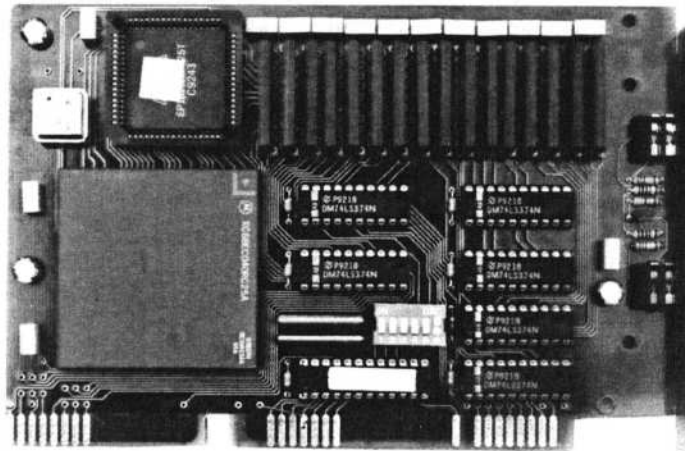
The QXL turns the common PC into a QL compatible. The package comprises a half card that plugs into an 8 or 16 bit standard ISA slot and a diskette loaded with a QDOS compatible operating system and a Superbasic compatible interpreter. After installation simply type QXL and the PC will appear to be a QL allowing QL programs to be run from QL format diskettes.

The card itself has a 32 bit 68EC040 processor running at 20MHz which gives a good turn of speed. This processor has access to its own RAM and so performance is virtually independent of the host PC whether it has an 8088 or a Pentium. In fact the PC is used purely as an I/O system giving QL programs access to the PC's floppy disc, hard disc, keyboard, display, serial and parallel ports. The card itself has QL style network ports to allow connection to a QL network. The minimum PC specification required is an XT with EGA display and a spare standard slot.

Varying RAM sizes from 1M up to 8M can be supplied. The smaller capacities can be upgraded to the larger ones and the cost is simply the price difference. Not all the RAM is available to the user programs; the 1M equates roughly with a TRUMP CARD QL memory size and the 2M with a GOLD CARD QL.

During the lifetime of the QXL we intend to enhance the software to make use of the new hardware facilities of the PC such as SVGA graphics. As has been our policy with the TRUMP CARD and GOLD CARD we intend to provide software upgrades free of charge.

SYSTEMS

QXL prices

1M	**£295**	**(£255)**
2M	**£325**	**(£280)**
5M	**£410**	**(£355)**
8M	**£495**	**(£430)**

(prices in brackets for outside EC)

See us at The Salvation Army Building, Memorial Boulevard, Newport, RI 02840, U.S.A. on 5th June 1993, 13:00 to 18:00

INTERNATIONAL QL REPORT (IQLR) is a regular magazine that all QL users should read. It has articles for the beginner, the advanced user and every one else in between. Also, the international flavour combined with low advertising rates makes it probably the best place to locate QL related items. IQLR is run by QL enthusiats whose proud boast is that they have never been late with an issue. If you do not already get it then 'phone us now. One year's subscription for 6 issues to any European address is £22.00 and it's worth every penny. Subscribers elsewhere should contact SeaCoast Services, 15 Kilburn Court, Newport, RI 02840, U.S.A. direct.

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QMATHS I
A REVIEW, Part 1
OAK RIDGE, TENNESSEE, USA - MEL LAVERNE

Digital Precision, Ltd.

"QMATHS" first appeared in DP's ads around December 1991 (not having the Sept & Oct 91 QL Worlds, I can't be more precise) as the "QMATHS MATHEMATICAL SYSTEM". In June 1992, like an amoeba, the system split into two parts. It is Part One that will be reviewed here. I have no information at this time on the content of Part Two.

QMATHS I comes with a comprehensive manual of 68 pages, containing five sections: Qmaths, Qfract, Surface Modeller, a group of six High Precision Calculators (14 to 611 decimal digits !), and a "Mathematical Compendium". In order to do justice to the system, I propose to cover only the first two items this time.

Qmaths is covered in the first seventeen pages of the manual and QFract in the next thirty-one.

I should point out here that Digital Precision (DP) tends to use "Qmaths" for both the overall package and for its symbolic algebraic expression interpreter. I shall, if necessary, use 'QMATHS" for the former and "Qmaths" for the latter.

Following the initial boot, the main QMATHS menu will appear, offering access to all parts of the system.

Qmaths v 2.10, 1991 by C. R. Johnston

Entering "Q" brings in the Qmaths system. The screen then splits into three windows, commands at the top, a larger expressions window below, and a status window at the bottom.

The commands available in the main menu are displayed as shown below, with a flashing cursor at the right:

Define Simplify Transforms Working Lessons Print Options Review Clear End ?

Commands are selected by entering the initial letter of the word. If the command selected requires a further choice, a window is opened under the chosen command, listing the options available.

Qmaths operates with an extensive set of pull-down menus and sub-menus. All of the menus (and sub_menus) operate in non_destructive windows, i.e., any portion of the screen that is obliterated by a menu is restored when the menu is removed.

Some of the pull-down menus have options that lead to further menus. The next menu then appears over the previous menu but displaced somewhat to the right and down. This gives a visual clue to the depth of the menu stack. Generally, the ESC key will return you to the previous menu with no other action. This is useful if you find that the option selected wasn't really the one you wanted after all (it happens !).

An extremely useful feature is the ability to call up a help file (with F1) at almost any

QMATHS - (CONT'D)

level of the menu stack. The file is 'context-sensitive', i.e., it is relevant to the current menu. This can be important when faced with a choice among several alternatives whose actions may not be intuitively obvious.

I would recommend to the first time user that the "Lessons" command be the initial venture into Qmaths and, further, that the Introduction be selected to start. This provides a quick demonstration of the interpreter and leads into the remainder of the lessons: Algebra, Arithmetic, Calculus, Complex Numbers, Hyperbolic Trigonometry, Matrices, Solved Problems (actually, only one), Special Relativity (I found this one to be an excellent, down-to-earth, understandable exposition !), Transforms, and Trigonometry.

Every so often, the program pauses and offers the choices to "Continue", "Break out", "Skip to next section", or "Non-stop". Simply enter the initial letter to select (not case-sensitive).

"Continue", as might be expected, simply presents the next portion of the current lesson, or, if the current lesson is finished, offers the next lesson in line.

If you become bored or want to try some examples, type "B" (for "Breakout). You are then returned to the main menu, but Qmaths keeps track of where you were. When and if you wish to return, type "L" (for Lessons), then "C" (for Continue) and you find yourself back in the Lessons, precisely where you left off.

"Skip" terminates the current lesson and moves to the next one in line.

"N" presents the lessons without the pauses for prompts. This might be used if you wanted a printout of the lessons, minus all the pauses.

The manual claims that two other files, "Lesson_System" and "Standard_Functions" are included. I did not find them on the review disk.

As an example of Qmaths's abilities, consider the trigonometric identity

$$TAN(a+b) = TAN(a)*TAN(b)/(1-TAN(a)*TAN(b)).$$

Given the left side of this equation, let's make Qmaths derive the right side. To put Qmaths through its paces, we input d (for Define) and then, in reponse to the Qmaths request for an expression, we input tan(a+b). Qmaths responds with, e.g.,

#10 user TAN(a+b)

The 10 is just a 'for instance' label. Qmaths keeps a running total on the number of expressions generated in a session. If you should want to recall TAN(a+b) at some future time, you could enter "d" and "#10". The line would reappear but with a new numeric label.

Now we type "t" (for Transform), "t" again (for Trigonometric), "1" (the choice taken is

QMATHS - (CONT'D)

"1 Sums & Multiples" because we have a sum of angles), and finally "f" (for the "Forward" transform from sums to products). Qmaths responds with

#11 t $\frac{TAN(a) + TAN(b)}{1-TAN(a)*TAN(b)}$ (Correct & close as I can come to the actual printout)

Suppose, now, that we wanted TAN(2*a). This can be obtained by setting b = a in #11. So, we "Define" subs(#11,b,a). This means substitute b for a in expression #11. Qmaths then responds with

#12 user $\frac{SUBS[Tan(a) + TAN(b),b,a]}{[\ 1-TAN(a)*TAN(b)\ ]}$ (Again, close to the actual printout)

Finally, we type "s" (for Simplify). Qmaths responds with

#13 s $\frac{2*TAN(a)}{1-TAN(a)^2}$ (The correct result !)

Qmaths displayed similar virtuosity in other fields. For instance, I had requested the integral of $e^{(-x)}*SIN(x)$ from 0 to n*PI. To my brief surprise, unevaluated Sin and Cos terms appeared in the result. After all, SIN(n*PI) = 0 and COS(n*PI) = (-1)^n, right ? Wrong ! Those relations are true only for an integer n, and I had not made n integral. Qmaths quite properly did not evaluate those terms. When n was assigned integer values, e.g., 100 or 101, the terms were indeed evaluated.

As you might surmise by this time, I am impressed by Qmaths's abilities. Having noted that DP's advertising tends to be loaded with superlatives (incredible, ultimate, superb come to mind), I had approached this evaluation with some skepticism. That skepticism has vanished.

I am particularly impressed with the ease of recovery from a wrong path taken somewhere in the decision tree, as sometimes happens. There don't seem to be any fatal decisions involved. At worst, one can use the "Review"command and backtrack through previous steps to select a restart expression. Alternatively, Define #n, where n is the number of the expression at which you would like to restart.

Conclusion ? Whether you're a mathematics dilettante (like me) or quite serious, Qmaths can be a valuable tool. Besides, it's fun !

QFract   M. D. Knight

QFract provides a system for producing a whole class of fractals comparatively easily. The basic idea is not new, having been published by Aristid Lindenmayer in 1968 in "Journal of Theoretical Biology" as a basis for a mathematical theory of plant development. Similarly, the language is not new, having developed from the Lindenmayer publication. What is new is the interpreter that runs the system. The QFract interpreter provides, in the author's words, "a neat, user-friendly environment in which to experiment."

QMATHS - (CONT'D)

Fractals can be generated by a variety of means such as iteration in the complex plane (exemplified by the Mandelbrot Set), iterated function systems with repeated application of a set of linear transforms, and "String Rewriting Systems" (Also known as "Lindenmayer Systems" or "L-systems" for short.). The QFract system belongs in the last-named category.

The central notion of a string rewriting system is that a complex object may be defined in terms of a simple initial object, whose parts are then successively replaced by means of a set of rewriting rules. The initial simple object is described by a short string of characters. The rewriting rules then replace the characters in the original string with new sequences. Repeated application of the rules can (and often does) generate an extremely long string that describes an exceedingly complex object. The main job of the interpreter is to make sense of this long string of symbols, determining what lines to draw, where, and in what direction.

The interpretation used in QFract is based on a LOGO-style "turtle". A state of this imaginary creature is defined by the triplet (x,y,a), with the Cartesian coordinates (x,y) giving the turtle's position and the angle a (or heading) showing the direction the turtle is facing.
Defining a step size s and an angle increment d, a set of symbols for moving the turtle could be

F	Move a step s in direction a, drawing a line
f	Move a step s in direction a, without drawing a line
+	Turn left (counterclockwise) through angle d, position unchanged
-	Turn right (clockwise) through angle d, position unchanged

Suppose, now, we give our "turtle" the commands "F-F-F-F", having previously specified its starting point and direction. The turtle will draw four connected lines of length s, each line being rotated clockwise through the angle d relative to the previous line. If we make d = 90 degrees, the figure closes and is a square.

Does this seem like an excessive amount of effort just to draw a square ? It is, if that's all we do. But suppose we replace each F in the original string with FF-F--F-F, each F in the resulting string with the same sequence, and repeat this process several times. Again, put our busy turtle to work. The resulting pattern bears a strong resemblance to frost dendrites directed inwardly from the edges of a square plate.

Let's make a "small" change in the pattern. Move the second F adjacent to the third F, ie, the pattern is now F-FF--F-F. Repeating the above procedure, we get a totally different pattern, resembling nothing so much as a tilted square with a few healthy bites taken out of each side. Clearly, small changes in input do not mean small changes in output.

It is in the investigation of the effects of input variations that QFract comes into its own. The accompanying editor allows you to specify your own set of rules and run them to see what results. Or, you could start with one of the existing "scripts" and edit it.

QMATHS - (CONT'D)

The manual offers a clever means for tracking the effects of changes in your set of rules: tag each rule with a separate color. That way, as the pattern develops, you may be able to see just what each rule accomplishes.

Try Qfract ! You may find, as I have, that it becomes addictive, that "just one more change" will lead to that earth-shaking development the world has been waiting for.

A reading list for the curious:

If you would like to know more about String Rewriting Systems (or L-systems, take your choice), I offer the following references. They are listed in estimated order of difficulty.

1. "The Science of Fractal Images", Editors: Peitgen & Saupe. Springer-Verlag, 1988. Appendix C, pp. 273-286. The appendix has a good explanation of the basis for L-systems, and, even better, the needed algorithms in pseudo-code that is almost directly translatable into SuperBasic. Be warned, though, the Basic programs are slo-o-ow (on the order of 10-15 times slower than QFract).

2. "The Algorithmic Beauty of Plants", P. Prusinkiewicz & A. Lindenmayer. Springer-Verlag, 1990. This is probably the (current) definitive work on L-systems; it starts easily but rather quickly gets deep (and, yes, the second author is the Lindenmayer of Lindenmayer-Systems).

3. "Mathematical models for cellular interaction in development, Parts I and II", Journal of Theoretical Biology, 18:280-315, 1968. This one is probably only for the brave (or foolhardy ?).

Text87 plus 4 - A REVIEW   SOFTWARE 87
TROY, MICHIGAN, USA - DON WALTERMAN

This review of text87 plus 4 is being written using text 87. I rarely turn on my QL without using text87 for something. This doesn't mean I'm always writing letters. I also use text87 to find information. I have a 1.2 MByte file containing all the zip codes of cities in the United States. To find a zip code when you only know the city use text87 on that ASCII file. It finds the zip code in that file as fast as you enter the command. I can't imagine going back to Quill again. Getting to this comfort level with text87 took some serious effort. This program had me frustrated during the learning curve more than most software I own. The frustration is well worth it though. Once you understand the organization of the program, you will not want to go back.

While working on this review I thought about writing it as a getting started manual but realized this is a review not a manual so I'll discuss my impressions of the program and leave a getting started manual for another time or person.

I found the manual to be similar to many I use at work (in computer service). It

TEXT 87 - (CONT'D)

contains a lot of information but it is not easy to find what you are looking for. Once you understand the program you can usually find the information in the manual. In other words, its a good reference manual but needs some work to improve it as a getting started/tutorial manual. I've found that I rarely use the manual now. Help is also available as a built in part of the program (just press F1). In some ways the on-line help facility is better than the manual. The information you need is much easier to sort through and is organized in a practical way.

The big trick to getting started with .text87 is planning. With text87 you have so many options available that a little thought about what you are going to do is a good idea. With Quill your only options were the few choices under the Design menu. Text87 allows you to choose paper size (A3, A4 or U.S. Letter). It also allows you to choose orientation (portrait or landscape). Within these choices you can specify margins (on all 4 sides) and columns per page. You also can choose whether you want page numbering, headers or footers and where on the page you want them. You can even specify that each page follow a different format and switch back and forth. Once you decide how much of each page you want to print to you need to decide how to set your rulers. Rulers are the way text87 allows you to set tabs, margins, line spacing and justification. Think you are ready to type? Not yet. You also need to decide what font to use. Text87 offers me 87 fonts to use with my DeskJet (every DeskJet font available from HP). You then get to add options like underline, bold, superscript and subscript. I initially tried to create documents without understanding the importance of setting up rulers, page layout and font style. This caused me no end of grief as I couldn't understand why certain things kept happening. In retrospect, text87 was playing by the rules and I wasn't. While text87 comes with some sample files, the problem is the sample files include predefined setup information. There really needs to be a tutorial chapter stepping the new user through setting up a blank template. Make sure to review 'How to store commonly used text settings' (page57).

In order to set your page layout, press commands menu F3 (sound familiar?), then L for layout options. You are presented a graphic of a sheet of paper with a box showing the area that can be printed. Along the right the dimensions are spelled out in 1/6 inch increments or millimeters as you want. I would like the horizontal measurement to be in whole inches. The vertical measurement in 1/6 inch increments makes sense since that converts directly to lines per page. However the horizontal dimension doesn't make much sense that way. I also would like to see some more options for paper size like U.S. Legal and U.S. Business Envelope. The graphic has the advantage of immediate feedback to let you know what area your text will cover on the page. Much better than trial and error with settings (remember the Quill Design options).

In order to set the ruler or rulers, press commands menu F3, then R for ruler options. The Ruler contains information about each line. A different ruler can be specified on a line by line basis. The ruler contains tabs (left, right, center or decimal), margins (paragraph, first line and right margin) , line spacing and justification. Line Spacing needs to be specified since text87 supports more than one point size. Point size relates to how large the characters are. If you leave the line spacing at default and print large characters you will probably have lines overlapping.

To set the font type, press commands menu F3, then T for type options. All the fonts available on your printer will be displayed. You can select the default font as well as 10

TEXT 87 - (CONT'D)

fonts with highlight options. Your document can use more than 10 combinations but the 10 you choose will also be available through the shift F3 short-cut.

At this point you are ready to type your document. I saved my most common choices as blank templates to load in. For example, I have a blank envelope template set up with my return address information already filled in. It also is set up to print the first line of the to address in 14 point bold type with rest in 12 point normal type. This gives a very professional looking envelope with no labels. I also have blank templates for normal letters. Once you decide what options you like to use the most, save them as templates and you won't have to set them up again. Note example below.

Don Walterman
P.O. Box 176
Troy, MI
    48099-0176

Bob Dyl
SeaCoast Services
15 Kilburn Court
Newport, RI
    02840

Text87 may remind you of Lotus 123. Many of its menus are similar in that a line of options will appear across the top of the screen. You then select either the first letter of a command or a function key to move on to the next menu or perform some action. Many commands will remind you of Quill (shift-F4 to toggle Overwrite/Insert mode). I prefer the structured menu approach to commands rather than remembering many control-alt key combinations. There are some short cut commands available such as control-b to enter block definition mode.

Text87 contains so many features its hard to list them all, let alone comment on all of them. A full spell-checking dictionary (really dictionaries) is available from the shift-F1 key. You can choose between a huge or normal dictionary, your own special dictionary or foreign language dictionaries. The dictionary can be customized to fit your own requirements. You can have many different documents in process at once all within one copy of the text87 program. It is easy to toggle between documents. You can even change the way the open files are displayed (stacked or tiled). One feature I use all the time is print preview. Print preview lets me see what my text will look like on the page without having to print it. This is accomplished by showing a reduced image of the full page and then blocking in portions of the page containing text. I know print preview has saved a few trees just from my work.

Text87 can import ASCII and Quill files. I have nothing but praise for its capabilities. I haven't had any problems importing Quill files. The 1.2MByte U.S. Zip Code list I mentioned in the first paragraph imported easily.

TEXT 87 - (CONT'D)

There has been a lot of discussion about the speed of various word processors. I can only comment first hand on the Quill variants (Quill 2.35, Turbo-Quill 2.35 and Xchange). Text87 makes Quill seem to crawl. Scrolling forward or backwards through a file is simple and fast. Finding specific text in any size file is as fast as I could ask for. Moving or copying blocks of text is quick and painless.

Text87 also remembers where you were in a file when you save it. The next time you load the file in you are right where you left off, a very thoughtful little extra. Finding files with text87 is easy. When prompted to load a file, pressing the up or down arrow key provides a listing of files available a page at a time. Just move the menu bar to the proper file to choose it for loading. I would like this feature to be enhanced so we can select import files by Toolkit II wildcards like flp2__doc for Quill files only or flp2__txt for just text files.

Text87 is designed to get every bit of performance out of your printer. I can turn out very professional proportionally spaced documents and envelopes now. It is amazing that text87 can cope with the bewildering combination of options current printers offer. Remember battling with translates to get a character to print out? Forget translates. Text87 has everything mapped out for you. While it can't give you an exact WYSIWYG (What You See on screen Is What You Get on paper), it does a good job of showing proportionally spaced text and various character point sizes on screen. In fact, what you get on paper looks much better than what you see on the screen. Once you print out your text with a proportional font, the normal even spacing that you are used to looks very amateurish. Proportional spacing puts more text on the page as well as making the page more readable. As you get into text87 you will learn about fonts and point sizes. Don't worry, you'll pick up the terminology as you make use of all your printer features. You've probably noticed that the bulk of questions asked about Quill and the QL in general relate to getting proper printout. With text87 you can forget about translates, initialization strings, using install_bas, escape codes and all the other ordeals you had to endure to put words on paper.

Text87 contains still more features that I haven't mentioned. The wide array of printer drivers includes everything from standard 9 pin printers to daisy wheel printers to 24 pin printers to the Hewlett-Packard DeskJet 500 to the Epson laser printer. Text87 also provides a service to customize a driver for your printer if you have one that is really unique.

Text87 also contains some features that have people using the words DeskTop Publishing to describe it. Text87 allows you to edit fonts, import graphics into your document and print your text in various column layouts. This can be looked at as DeskTop Publishing. I prefer to consider it as a very thorough and complete word processing package.

Text87 comes very close to my idea of an ideal word processor. Do not let the difficult learning curve stop you from getting this program. I have barely scratched the surface of what this program can do. Text87 allows you to customize nearly all aspects of the program. The defaults will get you started making great looking documents. I feel text87 is well worth the price. If you are still undecided, consider purchasing the demo version of text87. It contains the entire program minus the ability to save or print files. The demo version comes with sample print files so you can see what your printer can do. If you can't find someone locally to answer questions about text87, I can be reached through IQLR.
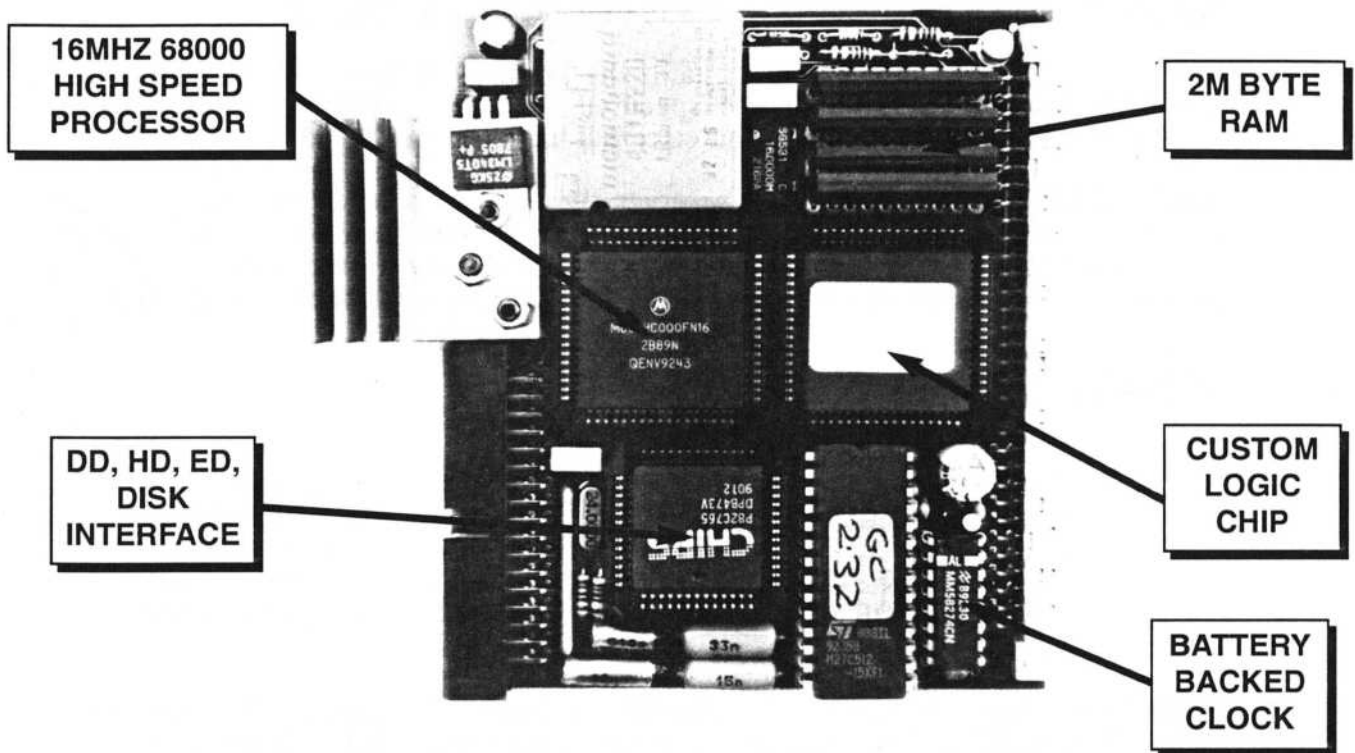
IQLR CONTRIBUTORS

As we progress into our third year of publication it is only fitting that we honor our author's. Their unselfish willingness to share their knowledge and experience with the QL community is to be commended. Our heartfelt thanks go to:

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Why not add your name to our list of contributors ??? It's easy , just write about what your into (QL/QDOS wise) and send it to IQLR as either a TEXT87_T91 file or QUILL_doc file. We only ask that your article be POSITIVE, we try our hardest to avoid negitive comment.

(Editor's Note: We've printed EVERY article ever submitted to us.)

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IQLR is sponsoring a North American QL/QDOS Get-To-Gether on the 5th of JUNE 1993. The Salvation Army Building on Memorial Boulevard in Newport, Rhode Island, USA will be the center of the festivities. The show will run from 1300 to 1800 hours (1PM to 6PM EDST), after which an optional DUTCH TREAT DINNER (you pay for your own meal) will be held at the Newport Beach Club (one mile down the road from the Salvation Army Building).

Scheduled to attend and demonstrate their latest wares will be: *Stuart Honeyball* of Miracle Systems Ltd., *Tony Firshman* of T.F. Services, *Bill Richardson* of W. N. Richardson & Co. (EEC), *Frank Davis* and *Paul Holmgren* of Mechanical Affinity, and *Bill Cable* of Wind & Wood Computing. In addition, *Freddy Vachha* of Digital Precision and *Dilwyn Jones* of Dilwyn Jones Computing are outside possibilities.

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If you'd like to attend or have any questions, contact *Bob Dyl* at IQLR or telephone *401-849-3805*, we'll be glad to help you in any way we can. It will be necessary to charge a modest admissions fee of $3.00 per person for those of you registring with IQLR in advance, the admissions fee at the door will be $5.00 per person. Why not register in advance and save $2.00, it will also allow us to pre-print your I.D. badge, all others will be hand written.

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